



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

### Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

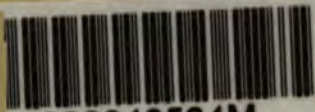
We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

### About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>





600040534M







15 & 16 VICTORIÆ, Cap. 83. Sec. XXXII.



ALPHABETICAL INDEX  
OF  
PATENTEES AND APPLICANTS FOR PATENTS  
OF INVENTION,  
FOR THE YEAR 1860.

---

Printed and Published by Order of the Commissioners of Patents,

UNDER THE

ACT of 15 & 16 VICTORIÆ, Cap. 83. Sec. XXXII.

---

BY BENNET WOODCROFT,

SUPERINTENDENT OF SPECIFICATIONS, INDEXES, &c.

---



LONDON:  
PRINTED BY GEORGE EDWARD EYRE AND WILLIAM SPOTTISWOODE,  
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY.  
PUBLISHED AT THE GREAT SEAL PATENT OFFICE,  
SOUTHAMPTON BUILDINGS, HOLBORN.

1861.



**ALPHABETICAL INDEX**

OF

**PATENTEES AND APPLICANTS FOR PATENTS OF  
INVENTION,**

**FOR THE YEAR 1860.**

Abb]

[Aio

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
<b>A.</b>			
ABBOTT, EDWARD - - -	771	24th March 1860	Steering ships and other vessels.
ABBOTT, WALTER - - -	1894	6th June 1860	Reaping-machines. (Patented by William McIntyre Cranston.)
ACCARAIN, ALBERT - - -	956	16th April 1860	Treating ores of zinc; apparatus employed therein.
ADAMES, CHARLES HENRY -	3155	24th Dec. 1860	A new or improved mode of manufacturing frying-pans and other articles produced from sheet-iron or other metals.
ADAMS, ROBERT- - - -	285	3rd Feb. 1860	Breech-loading guns; making up cartridges for the same.
ADAMS, THOMAS - - - -	2344	27th Sept. 1860	Manufacture of the joints of brooches and other similar dress fastenings.
ADAMSON, ISAIAH - - -	1427	11th June 1860	Improvements in hydraulic or other like presses, and in the apparatus connected therewith for extracting oils from seeds.
ADCOCK, HENRY - - - -	964	17th April 1860	Puddling, balling, and mill furnaces.
ADDENBROOKE, GEORGE -	915	12th April 1860	Apparatus used in raising and lowering weights in mine shafts.
ADIE, PATRICK - - - -	357	10th Feb. 1860	Means and apparatus for measuring angular and actual distances.
AGATA, DOMINGOS SANT -	1201	16th May 1860	An improved disinfectant.
AGER, GEORGE - - - -	1082	27th April 1860	Means or apparatus for breaking up or opening land.
AGER, NATHAN - - - -	2924	28th Nov. 1860	Apparatus for raising building materials.
AHSBOHS, JOHN - - - -	1475	16th June 1860	Machinery for cutting veneers. (Patented by Edward Stone.)
AICH, JOHANN - - - -	278	3rd Feb. 1860	Amalgamating metals or producing alloys. (Patented by John Gedge.)

[Ait]

## ALPHABETICAL INDEX OF PATENTEES

[Am<sub>b</sub>]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
AITKEN, JOHN - - -	2756	8th Nov. 1860	Clocks.
ALBITES, PIERRE MODESTE [TITUS OCTAVE COEN.]	581	2nd March 1860	Photographic apparatus.
ALBITES, PIERRE M. T. O. [COEN.]	1860	31st July 1860	Photographic apparatus. (Patented by Joseph Willcock.)
ALBRECHT, CHARLES EDMUND.	1025	24th April 1860	An improved apparatus for sifting or screening.
ALDIN, CHARLES - - -	1341	31st May 1860	Construction of paving tiles.
ALDRED, WILLIAM - - -	370	11th Feb. 1860	Improvements in apparatus applicable to steam-boilers, for liberating steam therefrom either in the event of excessive pressure or of deficiency of water, for giving audible signals in the like cases, and for regulating the supply of water thereto.
ALDRIDGE, FREDERICK [THOMAS.]	110	16th Jan. 1860	An improved soft waterproof cloth hat.
ALEXANDER, JAMES BELL -	313	6th Feb. 1860	Laying sub-marine electric telegraph cables. (Patented by Alfred Vincent Newton.)
ALEXANDER, THOMAS - - -	2913	27th Nov. 1860	Production of photographic proofs, and their application to printing purposes.
ALLDAY, WILLIAM THOMAS BISSELL.]	67	10th Jan. 1860	Certain improved apparatus for separating filings or other small bits or particles of iron or steel from other metallic filings, scrapings, chippings, or other small particles or dust.
ALLEN ALBERT GOULD - -	1417	8th June 1860	Sewing-machines. (Patented by William Edward Newton.)
ALLEN, E. G. - - -	306	4th Feb. 1860	An improved construction of combination steam gauge. (Patented by Alfred Vincent Newton.)
ALLEN, FREDERICK - - -	2112	1st Sept. 1860	A machine called a dumb jockey used for the breaking and training of horses.
ALLEN, JACOB - - -	1568	28th June 1860	An improved method of connecting together the several tubes used in connection with steam-boilers for superheating steam.
ALLEN, JAMES - - -	2237	15th Sept. 1860	Apparatus for preventing the explosion of steam-boilers.
ALLEN, THOMAS - - -	415	15th Feb. 1860	Window sashes.
ALLEN, THOMAS FREDERICK -	150	20th Jan. 1860	Bait cans for fishing purposes.
ALLEN, WILLIAM - - -	1698	13th July 1860	{ Prevention of incrustation and corrosion of steam engine boilers.
ALLEN, WILLIAM - - -			
ALLEN, WILLIAM DANIEL -	3072	13th Dec. 1860	Manufacture of the bearings or "brasses" in which the axles of locomotive engines and carriages revolve, and also in the bearings, "brasses" and other parts of plummer blocks employed in machinery generally.
ALLEN, WILLIAM HENRY -	955	16th April 1860	Improved nippers for attaching blocks and tackles to ropes. (Patented by William Edward Newton.)
ALLEWEIRELDT, ISADORE -	3060	13th Dec. 1860	An improved draught generator. (Patented by George Frederic Chantrell.)
ALLISON, DAVID - - -	2591	24th Oct. 1860	Window frames and sashes.
AMBLER, JOSEPH - - -	280	1st Feb. 1860	Looms for weaving.
AMBLER, JOSEPH - - -	852	3rd April 1860	Looms for weaving.
AMBLER, JOSEPH - - -	1205	16th May 1860	A new kind of cloth or woven fabric.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
AMBLER, WILLIAM - -	1233	19th May 1860	Means or apparatus to facilitate the consumption of smoke in furnaces.
AMOTT, GEORGE ROUGHTON [BROMAGE.]	2805	15th Nov. 1860	An improved plough with mortice chisel and plough iron combined.
ANDERSON, ALBAN - -	551	28th Feb. 1860	Governors of motive-power engines.
ANDERSON, GEORGE - -	1693	13th July 1860	Singeing pigs; apparatus for the same.
ANDERSON, JAMES - -	2412	5th Oct. 1860	Preparing or arranging potatoes for sale.
ANDERSON, JAMES - -	2666	31st Oct. 1860	Manufacture of felt; mode of applying the same to railways and to other uses.
ANDERSON, JAMES - -	2873	23rd Nov. 1860	Preparing potatoes for boiling or cooking.
ANDERSON, MURRAY - -	167	23rd Jan. 1860	Improved ventilating apparatus.
ANDERSON, ROBERT - -	2451	9th Oct. 1860	Apparatus for economizing and regulating the flow and passage of fluids for flushing waterclosets.
ANDERVALT, PASQUALE - -	1799	25th July 1860	Processes of and apparatus for unwinding silk from cocoons. (Patented by Marc Antoine François Mennons.)
ANDREW, CHARLES WILLIAM -	317	6th Feb. 1860	An improved method of trapping sinks, especially adapted for kitchen and scullery sinks in domestic dwellings, to prevent escape of noxious effluvia therefrom.
ANDREWS, SOLOMON -	2032	23rd Aug. 1860	Padlocks; keys for the same. (Patented by William Spence.)
ANDREWS, WILLIAM - -	2548	18th Oct. 1860	Insulators for telegraph wires.
ANGE, EUGENE ETIENNE [BARBIER ST.]	1053	26th April 1860	Portable bedsteads; mattresses to be used therewith. (Patented by John Henry Johnson.)
ANNABLE, BENJAMIN - -	515	25th Feb. 1860	Improvements in printing machines rendering the same more compact, of less bulk, and more available for use.
ANNAN, DAVID - - -	3017	8th Dec. 1860	Furnaces and fire bars.
ANTHONI, CHARLES GUSTAVE-	3024	10th Dec. 1860	Photographic apparatus. (Patented by William Clark.)
APPLEBY, JOHN - - -	170	24th Jan. 1860	Improvements in arrangements for and in the manner of embossing and finishing the surfaces of woven fabrics to produce thereon certain appearances, designs or patterns.
APPLETON, LEONARD - -	247	31st Jan. 1860	The arrangement and expeditious removal of patterns, invoices, letters, papers, &c., more particularly tailors' patterns.
APSEY, JOSEPH - - -	1381	5th June 1860	Steam boiler and other furnaces.
ARGY, EDMOND ARMAND [LOUIS D']	1331	30th May 1860	An improved candlestick.
ARGY, ROLAND D' - - -	583	2nd March 1860	Apparatus for raising water.
ARMOUR, JOHN - - -	2694	3rd Nov. 1860	Improvements in dies employed in the manufacture of sewerage pipes, chimney linings and other hollow bodies of clay.
ARNOLD, ALFRED - - -	1313	28th May 1860	Ruffles or gathered fabrics; apparatus employed in their manufacture. (Patented by John Henry Johnson.)
ARNOLD, BENJAMIN - -	1874	3rd Aug. 1860	Machinery for netting.
ARNOLD, GEORGE - - -	2293	20th Sept. 1860	Elastic skirts for distending ladies dresses.
ARNOLD, GEORGE, junior -	2293	20th Sept. 1860	Elastic skirts for distending ladies dresses.

[Arn]

## ALPHABETICAL INDEX OF PATENTEES

[Atk]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
ARNOLD, GEORGE, B. - -	600	5th March 1860	An improved ruffle and sewing-machine for producing the same, applicable also to ordinary stitching. (Patented by John Henry Johnson.)
ARNOLD, GEORGE, B. - -	1313	28th May 1860	Ruffles or gathered fabrics; apparatus employed in their manufacture. (Patented by John Henry Johnson.)
ARNOLD, JOSEPH - - -	404	14th Feb. 1860	Treatment of sewage matters for the manufacture of manure; apparatus for the same.
ARNOT, JAMES - - -	620	7th March 1860	A new or improved spindle for door and other knobs.
ARROTT, ALEXANDER ROBERT- [SON.	1483	19th June 1860	Manufacture of carbonate of soda.
ARROWSMITH, JOHN - -	2081	27th Aug. 1860	New or improved sash iron for conservatories and other structures made principally of glass, and also for windows and skylights and other like purposes.
ARTHUR, ALFRED - - -	1493	20th June 1860	Obtaining and applying motive-power.
ARTHUR, RICHARD WAUGH [MAC.	3107	18th Dec. 1860	Hulling and dressing rice and other grain. (Communicated by Thomas Sutherland.)
ASBURY, WILLIAM - - -	1980	15th Aug. 1860	Machinery for manufacturing tubes for tubular steam-boilers.
ASH, HENRY CLARKE - -	1804	25th July 1860	Apparatus employed in cooling and freezing liquids.
ASH, JAMES - - - -	2560	20th Oct. 1860	Construction of iron ships.
ASH, ROBERT - - - -	2314	22nd Sept. 1860	Metallic pens and penholders.
ASHBY, JOHN - - - -	2632	27th Oct. 1860	Improvements in apparatus for cleaning grain before grinding, and in dressing the same after being ground.
ASHBY, THOMAS WOODHOUSE	602	5th March 1860	Improvements in thrashing machines, part of which is applicable to cranks.
ASHBY, THOMAS WOODHOUSE	663	12th March 1860	Construction of hay making machines.
ASHCROFT, EDWARD HALLIDAY	863	4th April 1860	An improved hand drill stock. (Partly communicated by Henry H. Packer.)
ASHWORTH, CHARLES - -	755	23rd March 1860	Power looms for weaving.
ASHWORTH, DAVID - - -	754	23rd March 1860	Machinery or apparatus for preparing, spinning and twisting cotton and other fibrous substances.
ASKEW, JOHN - - - -	1679	12th July 1860	Window sashes.
ASKHAM, JOHN UNWIN - -	2801	15th Nov. 1860	A saloon barrel pistol knife.
ASPELL, JAMES - - - -	723	20th March 1860	Power-looms for weaving.
ASPELL, JAMES - - - -	2354	28th Sept. 1860	Power-looms for weaving.
ASPREY, CHARLES - - -	2725	6th Nov. 1860	Locks for bags, dressing cases and other articles.
ASSER, EDWARD ISAAC - -	543	28th Feb. 1860	A process of photographic proofs with printing or autographic ink, for the purpose of either using them as such or placing them back on lithographic stones or on metal.
ATKINSON, CHARLES FAN- SHAW.	1276	23rd May 1860	Manufacture of chains.
ATKINSON, CHARLES FAN- SHAW.	1999	17th Aug. 1860	Application of steel or iron to the manufacture of collars and wristbands to be worn as articles of clothing.
ATKINSON, ROBERT - - -	903	11th April 1860	Chimney tops.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
ATKINSON, ROBERT - -	1031	24th April 1860	An apparatus to give warning to the inmates of a house or apartment of the attempted entry of thieves or burglars, which may be called a burglar and thief detector.
ATTKINS, WILLIAM ALFRED -	1391	6th June 1860	Machinery for preparing, making, and moulding bricks, tiles, and other articles formed of clay, peat, or other materials.
ATWOOD, JOHN EDWIN - -	569	1st March 1860	Machinery for "sizing" raw silk or other threads, and for cleaning the same preparatory to the sizing operation. (Patented by William Clark.)
AUBERGIER, PIERRE HECTOR -	998	21st April 1860	Enclosing or covering opium and other matters. (Patented by William Clark.)
AUBERTIN, PAUL ELIAS -	2167	7th Sept. 1860	Manufacture of soap. (Communicated by Jules Gabriel Gros.)
AUBREVILLE, D. LÉOPOLD -	1059	27th April 1860	Manufacture of metallic boxes or vessels, used to contain preserved alimentary provisions or other substances; apparatuses and machinery employed therein. (Communicated by Alfred Henry Rémond.)
AULD, DAVID - - -	359	10th Feb. 1860	Machinery or apparatus for supplying steam-boilers with water.
AULD, DAVID - - -	2865	22nd Nov. 1860	Regulating the pressure and flow of fluids.
AUMONIER, HENRY STACY -	2613	26th Oct. 1860	Facilitating the division of sheets or pieces of paper or other substances into required forms; means or apparatus employed for the purpose.
AUSTEN, JOHN - - -	2966	3rd Dec. 1860	An improved method of roughing horse shoes.
AUSTIN, HENRY GEORGE -	1700	14th July 1860	Improved apparatus for propelling vessels.
AUSTIN, JAMES - - -	1358	2nd June 1860	Improvements in traction engines, in connection with machinery or apparatus for ploughing or cultivating land.
AUSTIN, JAMES - - -	2953	1st Dec. 1860	Machinery or apparatus for ploughing or cultivating land, part of which machinery or apparatus may be used as a traction engine.
AUTRAN, LÉOPOLD - - -	100	14th Jan. 1860	An improved candle wick. (Patented by Marc Antoine François Mennons.)
AUTRAN, LÉOPOLD - - -	770	24th March 1860	Method of, and apparatus for the manufacture of candles. (Patented by Marc Antoine François Mennons.)
AUXY, GASTON, CHARLES [ANGE, MARQUIS D'.]	1834	28th July 1860	An improved apparatus for the preservation of corn.
AVELING, THOMAS - - -	891	9th April 1860	Locomotive engines.
AVERY, GEORGE SMITH -	377	11th Feb. 1860	An improved construction of joints for railway bars or rails. (Patented by Alfred Vincent Newton.)
AVICE, EMILE - - -	2246	15th Sept. 1860	Manufacture of manure. (Patented by William Edward Gedge.)
AYCKBOURN, FREDERICK -	1683	12th July 1860	Tubular beds and bolsters.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
<b>B.</b>			
BABBINGTON, BENJAMIN GUY	582	2nd March 1860	Means or apparatus for protecting the throat and chest from atmospheric influences and which may also be employed as a protection to the mouth.
BACON, WILLIAM - -	1383	30th May 1860	Machinery for dyeing, washing, and sizing.
BACQUEVILLE, CHARLES -	1173	11th May 1860	Taps and valves. (Patented by Thomas Nasmyth.)
BAGLEY, THOMAS - -	1223	17th May 1860	Looms for weaving.
BAGSHAW, GEORGE - -	2803	15th Nov. 1860	An improved arrangement of the flues of steam-boilers for consuming smoke.
BAILEY, THOMAS - -	1890	4th Aug. 1860	"Temples" used in weaving textile fabrics.
BAILLIE, BENJAMIN - -	2200	12th Sept. 1860	An improved rifle range.
BAILLY, JACQUES DROCTOXÉE	1189	15th May 1860	An improved centrifugal turbine. (Patented by Charles Stevens.)
BAIN, ALEXANDER - -	1101	2nd May 1860	Means of obtaining copies of letters and other writings or documents.
BAIN, ALEXANDER - -	1718	16th July 1860	Means, apparatus, or articles for holding and supplying ink.
BAKER (Grover and Baker) -	2886	24th Nov. 1860	Sewing machines. (Patented by John Henry Johnson.)
BAKER, FRANCIS BRYAN -	3181	20th Dec. 1860	Manufacture of lace.
BAKER, GEORGE - - -	2370	1st Oct. 1860	Syphon and other taps or cocks employed for drawing off liquids.
BAKER, VALENTINE - -	1250	21st May 1860	Breech loading and other ordnance.
BAKER, WILLIAM - -	1288	24th May 1860	Manufacture or production of white lead.
BAKER, WILLIAM - -	1507	21st June 1860	Process of softening and purifying lead.
BAKEWELL, FREDERICK COL- [LIER.	2473	11th Oct. 1860	Furnaces. (Communicated by Jacob Reese.)
BALDWIN, JAMES, C. - -	2529	17th Oct. 1860	An improved mode of preserving hops and fitting them for storage and transportation. (Patented by William Edward Newton.)
BALDWIN, M. D. - - -	2529	17th Oct. 1860	An improved mode of preserving hops and fitting them for storage and transportation. (Patented by William Edward Newton.)
BALESTRINI, PIER ALBERTO -	1403	7th June 1860	Electric telegraph apparatus. (Patented by William Clark.)
BALLANDE, JEAN AUGUSTE [HILARION.	388	13th Feb. 1860	An improved paper and ink for writing and printing purposes.
BAMLETT, ADAM - - -	924	13th April 1860	Reaping and mowing machines, and implements connected therewith.
BAMLETT, ADAM CARLISLE -	1730	17th July 1860	Reaping and mowing machines.
BANKS, THOMAS - - -	198	26th Jan. 1860	Gas pipe tongs.
BANNEHR, JAMES - - -	1816	28th May 1860	Improvements in the nature and construction of closets and commodes for the reception and removal of excrementitious and other offensive matter, and in the manufacture of manure from thence.



[Ban]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Bar]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
BANVILLE, ALFRED DE -	972	18th April 1860	A method of and apparatus for communicating to railway passengers the names of the stations which the train successively approaches. (Patented by Richard Archibald Brooman.)
BAPTEROSSES, JEAN FELIX -	2485	12th Oct. 1860	Manufacture of furniture nails or tacks and other articles provided with metallic pins or points. (Patented by William Edward Newton.)
BARAGWANATH, JOHN PHILLIPS	3076	14th Dec. 1860	Hydraulic punching apparatus. (Communicated by Richard Dudgeon.)
BARAGWANATH, MICHAEL -	1484	19th June 1860	An improved portable hydraulic punch. (Communicated by Richard Dudgeon.)
BARAN, FERDINAND GABRIEL [MIGEOT DE.]	2040	25th Aug. 1860	An improved method of stopping bottles or other vessels for containing gaseous liquids.
BARANOWSKI, JEAN JOSEPH -	505	24th Feb. 1860	Improvements in presses specially adapted to the copying of letters.
BARBER, HARBY - - -	3080	14th Dec. 1860	Lamps used in mines.
BARBER, HENRY - - -	3172	27th Dec. 1860	Manufacture of spring knife scales and knife handles.
BARCLAY, ANDREW - -	509	24th Feb. 1860	Pumping-engines.
BARCLAY, ANDREW - -	2041	24th Aug. 1860	Pumping-engines.
BARDE, JOSEPH ANTOINE -	3023	10th Dec. 1860	An improved portable apparatus for producing and purifying lighting gas.
BARFF, FREDERICK SETTLE -	2608	26th Oct. 1860	Improvements in the production of artificial stone, which improvements are also applicable to the preservation of stone, bricks, tiles, and other analogous substances or materials.
BARFF, FREDERICK SETTLE -	2609	26th Oct. 1860	An improved self-acting apparatus for extinguishing candles in lamps or otherwise.
BARIL, ELIE DOMINIQUE -	1838	28th July 1860	Looms for weaving velvet or other cut pile fabrics. (Patented by George Henry Birkbeck.)
BARISSA, JEAN - - -	2464	10th Oct. 1860	Improved signalling and indicating apparatus (Patented by William Clark.)
BARK, CHARLES - - -	371	11th Feb. 1860	Manufacture of fleecy web.
BARKER, EDWARD BRUCE [BOUGHTON.]	2318	22nd Sept. 1860	Apparatus for raising or forcing water or other fluids.
BARKER, GEORGE JONES -	127	18th Jan. 1860	Machinery or apparatus for manufacturing shoes for horses and other animals. (Communicated by Henry Burden.)
BARKER, THOMAS - - -	127	18th Jan. 1860	Machinery or apparatus for manufacturing shoes for horses and other animals. (Communicated by Henry Burden.)
BARKER, WILLIAM, (junior) -	1246	21st May 1860	Improved apparatus for regulating the temperature of ale beer, porter, and other liquids, during the process of fermentation.
BARKER, WILLIAM - - -	2478	11th Oct. 1860	Steam-engines.
BARKER, WILLIAM HENRY -	1281	23rd May 1860	Moulds for candles.
BARKER, WILLIAM ROBERT -	1137	8th May 1860	Manufacture of artificial mineral chalybeate water.
BARKER, WILLIAM ROBERT -	2962	3rd Dec. 1860	Bottles for medicines and poisons.
BARLET, BENOÎT - - -	2786	13th Nov. 1860	Looms. (Patented by William Clark.)

[Bar]

## ALPHABETICAL INDEX OF PATENTEES

[Bar

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
BARLOW, EDWARD - -	3096	17th Dec. 1860	Machinery for carding cotton and other fibrous substances.
BARLOW, HENRY BERNOULLI -	1973	15th Aug. 1860	Manufacture or preparation of indigo. (Communicated by Messrs. Bresslauer, Meyer and Co.)
BARLOW, JOHN - - -	1921	8th Aug. 1860	Railway signals for communicating with the engine-driver, guards, and other parties while the train is in motion.
BARLOW, THOMAS - - -	487	23rd Feb. 1860	A new or improved rail for railways.
BARNETT, THOMAS - - -	2248	15th Sept. 1860	High-pressure steam-engines.
BARNETT, THOMAS - - -	2461	10th Oct. 1860	Machinery for drying grain, roots, and seeds, and for roasting coffee, cocoa, chicory, malt, and other vegetable substances.
BARNESLEY, ABRAHAM - -	1538	25th June 1860	Apparatus for the manufacture of welded iron tubes.
BARNESLEY, JABEZ ELUL -	1552	26th June 1860	Manufacture of welded iron tubes; machinery employed in the said manufacture.
BARNWELL, STEPHEN - -	2249	15th Sept. 1860	Combining and mixing certain solutions of pyroxylene with animal, mineral, and vegetable substances, by which its quality is altered in such manner as to produce hard, resistant, adhesive, plastic, or resilient compounds and articles unalterable in their nature and varied in colour, which said compounds in a state of solution may also be advantageously employed as paints or varnish.
BARR, HENRY JAMES - -	1080	28th April 1860	Working railway signals; apparatus employed therein.
BARRANS, JOSEPH - - -	182	24th Jan. 1860	Steam-boilers
BARRÉ, — - - -	1409	8th June 1860	An improved apparatus for washing and separating metals or their ores from impurities or other foreign matters which are mixed with them. (Patented by James Wright.)
BARRÉ, LEON PIERRE - -	279	3rd Feb. 1860	Steam-boilers.
BARRETT, BARNABAS - -	2833	17th Nov. 1860	Treatment of natural and artificial stone; manufacture or production of artificial stone.
BARRETT, WILLIAM - - -	1751	19th July 1860	Machinery to be used when casting metals.
BARROW, JOSEPH - - -	1794	24th July 1860	Construction of self-acting lathes.
BARTH, GEORGE HARMAN -	1193	15th May 1860	Processes for aerating or super-saturating water and other fluids with oxygen or compounds of oxygen or other gas or gases.
BARTHÉLEMY, CARL - -	797	28th March 1860	Using vacuum as a motive-power, and of the means by which the same is effected.
BARTHELEMY, FRANÇOIS -	2371	1st Oct. 1860	An addition to or improvement in gas meters. (Patented by Michael Henry.)
BARTHOLOMEW, GEORGE -	1274	23rd May 1860	Shoes for the feet of horses and other animals.
BARTHOLOMEW, GEORGE -	2878	23rd Nov. 1860	Boots, shoes, clogs, and goloshes.
BARTLETT, JOSEPH WETHERBY	1690	13th July 1860	Sewing-machines. (Patented by Charles Tiot Judkins.)
BARTON, MOSES - - -	680	8th March 1860	Certain improvements in the method of and apparatus for supplying and heating air, the same to be used as a motive-power for marine, locomotive, and stationary engines.



[Bar]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Bat

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
BARTON, MOSES - - -	1501	20th June 1860	A new or improved washing-machine, with the machinery or apparatus employed therein.
BARTON, NATHANIEL COX -	3083	15th Dec. 1860	An improved scaling ladder for military, naval, and other purposes.
BARTON, WILLIAM - - -	102	14th Jan. 1860	Ornamenting textile fabrics known as American cloth.
BARWICK, JAMES - - -	894	20th April 1860	Moulding india-rubber and other like gums in cells for galvanic batteries, and in insulators for telegraph wires.
BARY, JULIUS DE - - -	2484	12th Oct. 1860	Machinery for cutting and packing cigars. <i>(Patented by Richard Archibald Brooman.)</i>
BASFORD, WILLIAM - - -	1175	12th May 1860	Mode of constructing brick walls; mode of forming and ornamenting the materials to be used for the same.
BASSETT, JOHN ALLEN - -	539	27th Feb. 1860	Apparatus for decomposing steam.
BASSETT, JOHN ALLEN - -	541	27th Feb. 1860	Manufacture of gas for illuminating and other purposes.
BATCHELDER, JOHN M. - -	122	17th Jan. 1860	Improvements in the insulation of submarine electric telegraph wires. <i>(Patented by John Henry Johnson.)</i>
BATCHELDER, RICHARD N. -	78	11th Jan. 1860	An improved construction of lock. <i>(Patented by Alfred Vincent Newton.)</i>
BATCHELOR, HENRY - - -	2323	24th Sept. 1860	Apparatus and means employed for the production of geometric or ornamental figures or designs.
BATCHELOR, HENRY - - -	3081	14th Dec. 1860	Construction and manufacture of models of ships', boats, or other vessels.
BATE, GEORGE - - - -	954	16th April 1860	An improved method of igniting the charge in ordnance and other fire-arms.
BATE, WILLIAM - - - -	1048	26th April 1860	Attaching knobs to spindles of door locks and latches.
BATEMAN, DANIEL - - -	14	3rd Jan. 1860	Machinery for the manufacture of cards for carding wool and other fibrous substances.
BATEMAN, SAMUEL - - -	14	3rd Jan. 1860	Machinery for the manufacture of cards for carding wool and other fibrous substances.
BATES, STEPHEN - - - -	1225	17th May 1860	Bobbin, net, or twist lace machines.
BATESON, SAMUEL STEPHEN -	480	22nd Feb. 1860	Improvements in generating steam and in heating apparatus, and in the apparatus employed therein.
BATH, JAMES PARKER - - -	1398	7th June 1860	Improvements applicable to carriage wheels for use on common highways, railroads, or tramways.
BATHE, HENRY PERCIVAL DE	2823	16th Nov. 1860	Construction of plates or shields for the purpose of resisting shot and other projectiles.
BATHO, WILLIAM FOTHERGILL	1003	21st April 1860	Manufacture of metallic bedsteads.
BATISTE, CHARLES - - -	673	14th March 1860	An improved wood grooving machine.
BATLEY, JOHN - - - -	1352	1st June 1860	Improved machinery for cutting and shaping wood.
BATTALIER, JOSEPH MARIE [ALBERT.]	2401	4th Oct. 1860	Manufacture or extraction and application of colouring matters from the products of the distillation of coal tar. <i>(Patented by Charles Cowper.)</i>

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
BAUDOUIN, ——— - -	2252	17th Sept. 1860	A new medico-chirurgical bleeding instrument. (Patented by Charles Stevens.)
BAUDRIT, AUGUSTE THEODORE	1487	19th June 1860	Locks. (Patented by Richard Archibald Brooman.)
BAUER, WILLIAM - - -	590	3rd March 1860	Improvements in apparatus for diving and for raising and lowering bodies in water, parts of which improvements are also applicable to other useful purposes.
BAUER, WILLIAM - - -	1716	16th July 1860	An improved diving bell.
BAUER, WILLIAM - - -	1717	16th July 1860	A new method of laying down, and raising or cutting off, for repairing and other purposes of telegraph cables, chains, or ropes.
BAUHOEFER, LOUIS - -	1459	15th June 1860	An improved life preserving mattress. (Patented by George Davies.)
BAYELT, FRANCOIS JOSEPH DE	3089	15th Dec. 1860	Steam-engines. (Patented by Alexander Prince.)
BAYLEY, GEORGE WILLARD [REED.]	343	8th Feb. 1860	Improvements in rails, rail supports and fastenings, and the nut fastenings of rail-bolts, for the permanent way of railroads. (Patented by William Edward Newton.)
BAYLISS, BENJAMIN - -	51	7th Jan. 1860	Improvements in breech loading fire-arms, applicable for military and sporting purposes.
BAYNES, ROBERT - - -	2582	23rd Oct. 1860	Lawn mowing-machines.
BEALEY, RICHARD ROME -	2034	24th Aug. 1860	Shirt fronts.
BEARD, WILLIAM - - -	339	8th Feb. 1860	Adapting bead work and bugle work to harness and whip handles.
BEARDMORE, SEPTIMUS - -	196	26th Jan. 1860	Electric telegraphs.
BEARDMORE, WILLIAM - -	626	7th March 1860	Steam-engines.
BEATTY, FRANCIS STEWART -	2913	27th Nov. 1860	Production of photographic proofs and their application to printing purposes.
BEAU, PAUL ADOLPHE AU- [GUSTE.]	823	30th March 1860	A neomonoscope or apparatus for viewing photographic and other like pictures.
BEAUMONT, ANDRÉ ALEXAN- [DRE.]	2093	30th Aug. 1860	An engine for raising liquids.
BEAZLEY, GEORGE - - -	2585	23rd Oct. 1860	A new mode of preparing dyes produced from aniline.
BECK, JOHN - - - -	2652	30th Oct. 1860	Stop valves for water, steam, or other fluids.
BEDDAT, PIERRE ANDRÉ -	2229	14th Sept. 1860	A new propeller.
BEDELLS, CALEB - - -	1766	20th July 1860	Manufacture of braces.
BEDSON, GEORGE - - -	2144	5th Sept. 1860	Annealing, cleaning, and galvanizing, or otherwise coating wire and sheets or strips of metal with metals.
BEECH, AARON - - -	1400	7th June 1860	Machinery or apparatus for the prevention of explosions of steam boilers arising through deficiency of water or over pressure of steam.
BEECH, AARON - - -	2971	4th Dec. 1860	Machinery or apparatus for the prevention of explosions of steam-boilers, arising through deficiency of water or over pressure of steam.
BEECH, ROBERT - - -	2877	23rd Nov. 1860	Manufacture of stay cloth.
BEGGS, JOHN EUGENE - -	2435	8th Oct. 1860	Springs for railroad cars, locomotives, and carriages. (Patented by William Edward Newton.)



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
BELL, ISAAC LOWTHIAN -	183	24th Jan. 1860	Supplying hot blast to furnaces.
BELL, JOHN - - -	633	8th March 1860	Steam-engines.
BELL, JOHN SMITH - -	744	22nd March 1860	Steam-engines and boilers.
BELLAMY, JOSEPH - - -	2994	6th Dec. 1860	Traps for taking rats, birds, rabbits, and other animals.
BELLAMY, THOMAS - -	48	7th Jan. 1860	Manufacture of wire lattice work.
BELLEVILLE, JULIEN FRANCOIS.	155	21st Jan. 1860	Steam generators.
BELLHOUSE, WILLIAM - -	3175	27th Dec. 1860	Hoists.
BELLOT, EMILE - - -	1800	25th July 1860	Etching on zinc. (Patented by Marc Antoine François Mennons.)
BELLUT, VICTOR - - -	1520	22nd June 1860	Improvements in blinds called venetian or jalousies. (Patented by William Edward Gedge.)
BELOU, JACQUES - - -	935	14th April 1860	Production of motive-power; apparatus connected therewith. (Patented by Marc Antoine François Mennons.)
BELPAIRE, ALFRED - -	435	17th Feb. 1860	Improvements in fire-boxes and other parts of locomotive and moveable steam-engines
BELTON, PATRICK MICHAEL -	2104	31st Aug. 1860	Manufacture of a compound to be used as a substitute for animal charcoal in refining sugar and otherwise.
BELTON, BARTHELEMY -	1891	4th Aug. 1860	An improved cork cutting machine. (Patented by William Edward Gedge.)
BÉNÈCHE, JULES - - -	2232	14th Sept. 1860	Ornamenting glass with coloured designs or pictures in imitation of stained or painted glass. (Patented by William Edward Gedge.)
BENETT, JOHN THOMAS -	1953	13th Aug. 1860	Ships' propellers.
BENINGFIELD, GEORGE - -	57	9th Jan. 1860	Reservoir or fountain pens.
BENIOWSKI, BARTHOLOMEW -	2874	23rd. Nov. 1860	Manufacture of types; cases to be used therewith.
BENNETT, CHARLES F -	3051	12th Dec. 1860	Improved machinery for drying, stretching, and tentering woollen or other cloths. (Patented by George Shaw Harwood.)
BENNETT, JAMES HENRY -	1093	30th April 1860	Combined direct action balance safety valves.
BENNETT, THOMAS PETER -	2752	8th Nov. 1860	Certain improvements in or applicable to mules for spinning.
BENT, JOSEPH - - -	2515	16th Oct. 1860	Certain Improvements in ladies' clasps, and which said improvements are also applicable for connecting or holding wristbands, belts, and other articles of dress.
BENTEL, FERDINAND FREDERIC	2864	22nd Nov. 1860	Apparatus for communicating continuous rotary motion from manual power. (Patented by Richard Archibald Brooman.)
BENTLEY, ANDREW JACKSON -	955	16th April 1860	Improved nippers for attaching blocks and tackles to ropes. (Patented by William Edward Newton.)
BENTLEY, DAVID - - -	1984	16th Aug. 1860	Breech-loading fire-arms.
BENTLEY, JOSEPH - - -	1984	16th Aug. 1860	Breech-loading fire-arms.
BENTON, THOMAS - - -	2887	24th Nov. 1860	Manufacture of bells; alloys of metals to be used in the manufacture of bells.
BERCK, CHARLES - - -	1319	29th May 1860	Manufacture of the selvages of woollen cloths and other stuffs.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
BERGEN, JOHN - - -	2518	16th Oct. 1860	Chimney pots.
BERGER, JOHN BARKER -	133	18th Jan. 1860	An improved mode of and apparatus for ascertaining the proper course to steer ships or vessels.
BERGUE, CHARLES DE - -	82	12th Jan. 1860	Improvements in machinery for rivetting parts of which are applicable to machines for punching metal.
BERGUE, CHARLES DE - -	1944	11th Aug. 1860	Permanent way of railways.
BERRI, DAVID GARDEN - -	1020	24th April 1860	An improved date stamp.
BERSON, ALEXANDRE - -	2880	24th Nov. 1860	Making of cages and aviaries for birds.
BERTHET, FELIX - - -	2437	8th Oct. 1860	Means of winding up and setting watches. <i>(Patented by Louis Julien Olivier Jolly.)</i>
BERTHOLON, AIMÉ - - -	987	20th April 1860	A coke furnace for the distillation of coals. <i>(Patented by William Holland Kingston.)</i>
BERTRAND, AUGUSTE CONSTANTIN AIMABLE.	2565	20th Oct. 1860	Manufacture of matches and cigar lights.
BERTRAND, PIERRE JOSEPH -	3170	27th Dec. 1860	Improvements in axle boxes and in naves of wheels. <i>(Patented by Richard Archibald Brooman.)</i>
BERWICK, THE RIGHT HONORABLE RICHARD LORD.	1078	28th April 1860	Rifling fire-arms.
BESSEMER, HENRY - - -	578	1st March 1860	Machinery or apparatus employed in the manufacture of malleable iron and steel.
BETHUNE, SIR JOHN TROTTER	2928	29th Nov. 1860	Production of motive-power by application of the dead weight of liquids; apparatus connected therewith.
BETTS, JOSEPH EDWARD -	2254	17th Sept. 1860	An improved machine for cutting out clothing.
BETTYES, JOHN - - -	2677	1st Nov. 1860	Carriages and carriage springs.
BEVIS, RESTEL RATSEY -	161	21st Jan. 1860	Marine steam-engines.
BEWLEY, RICHARD JUNIOR	449	18th Feb. 1860	Mode of heating the drying rooms, sheds or stories used by potters and manufacturers of bricks and tiles.
BEYERBACH, JEAN FRÉDÉRIC -	2154	6th Sept. 1860	Manufacture of archil. <i>(Patented by William Edward Newton.)</i>
BÉZIAT, JEAN CIRILLE MARIUS	2812	16th Nov. 1860	Means or apparatus employed for permitting, stopping, and regulating the passage of steam, water, and gases.
BIDDELL, GEORGE ARTHUR -	299	4th Feb. 1860	Projectiles.
BIECHY, E.	737	21st March 1860	An improved construction of bridle. <i>(Patented by Alfred Vincent Newton.)</i>
BIEDERMANN, ENIL - - -	1638	6th July 1860	Apparatus for the measurement of gas and other fluids.
BIEHLER, GUSTAVE - - -	888	9th April 1860	An improved apparatus to be employed for blasting rocks and the application of the same to the formation of tunnels.
BIELEFELD, CHARLES FREDERICK.	641	9th March 1860	Manufacture of wads for guns; cases for containing the charge of powder for the same.
BIELEFELD, CHARLES FREDERICK.	718	19th March 1860	Fabrication of plastic materials pressed in moulds for building and ornamental purposes, and for statuary.
BIGELOW, LUCIUS - - -	319	7th Feb. 1860	Sewing-machines; apparatus connected therewith. <i>(Patented by William Newton Wilson.)</i>
BILLING, JOHN - - -	1963	14th Aug. 1860	Chimney tops.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
BILLINGTON, EDWARD - -	622	7th March 1860	Machinery for combing cotton, wool, flax, tow, silk waste, and other fibrous substances.
BILLINGTON, EDWARD - -	1877	3rd Aug. 1860	Machinery or apparatus for combing cotton, wool, flax, tow, silk, and other fibrous materials; machinery or apparatus for preparing the same to be combed or carded.
BINGLEY, JOHN - - -	2068	27th Aug. 1860	Improvements in hydraulic presses; partly applicable to other purposes.
BINKS, CHRISTOPHER - -	1240	19th May 1860	Treating certain manganese compounds for obtaining oxides of manganese and other products therefrom.
BINKS, CHRISTOPHER - -	1563	28th June 1860	Manufacturing oxygen gas.
BINKS, CHRISTOPHER - -	1564	28th June 1860	Manufacturing chlorine.
BINKS, CHRISTOPHER - -	3179	28th Dec. 1860	Improvements in manufacturing certain gases applicable in generating heat and light and in bleaching.
BIRCH, JOHN - - -	305	4th Feb. 1860	Construction of smoke consuming furnaces.
BIRCUMSHAW, JONATHAN -	1641	7th July 1860	Machinery for the manufacture of warp fabrics.
BIRKBECK, GEORGE HENRY -	631	8th March 1860	Floating-docks. (Communicated by William Wain.)
BIRKBECK, GEORGE HENRY -	1014	23rd April 1860	Machinery or apparatus for printing woven or other fabrics or tissues. (Communicated by Leon Malzard and Edouard Leopold Dulac.)
BIRKBECK, GEORGE HENRY -	1779	23rd July 1860	Construction of chimneys for lamps or apparatus for transmitting light. (Communicated by Étienne Soulié.)
BIRKBECK, GEORGE HENRY -	1838	28th July 1860	Looms for weaving velvet or other cut pile fabrics. (Communicated by Elie Dominique Baril.)
BIRKBECK, GEORGE HENRY -	2355	28th Sept. 1860	Electro-magnetic apparatus. (Communicated by Gabriel Perrin.)
BIRKBECK, GEORGE HENRY -	3177	28th Dec. 1860	Improvements in furnaces for consuming smoke. (Communicated by François Jules Chéry.)
BIRKITT, JAMES - - -	2898	26th Nov. 1860	Improved musical instruments particularly applicable to pianofortes and other such like instruments.
BIRKS, WILLIAM, (senior) -	528	25th Feb. 1860	Machinery for the manufacture of bobbin net or twist lace.
BIRKS, WILLIAM, (junior) -	528	25th Feb. 1860	Machinery for the manufacture of bobbin net or twist lace.
BIRKS, WILLIAM, (senior) -	1720	16th July 1860	Bobbin net or twist lace machinery.
BIRKS, WILLIAM, (junior) -	1720	16th July 1860	Bobbin net or twist lace machinery.
BIRKS, WILLIAM, (senior) -	2721	6th Nov. 1860	Bobbin net or twist lace machinery.
BIRKS, WILLIAM, (junior) -	2721	6th Nov. 1860	Bobbin net or twist lace machinery.
BISHOP, ROBERT HENRY -	1593	2nd July 1860	Sewing-machines.
BISHOP, JAMES - - -	1820	27th July 1860	Improvements in kitchen ranges and their boilers and ovens, some of which improvements are also applicable to kettles and other utensils or apparatus for heating or cooking.
BLACET, MATHIEU - - -	18	4th Jan. 1860	Miners' safety lamps.
BLACKBURN, BEWICKE - -	1258	22nd May 1860	Railway axle boxes and axles.

[Bla]

## ALPHABETICAL INDEX OF PATENTEES

[Bod]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
BLACKBURN, BEWICKE - -	2829	17th Nov. 1860	Axle boxes.
BLACKBURN, ISAAC - -	772	24th March 1860	Manufacture of iron and steel; making iron castings.
BLACKBURN, THOMAS - -	284	3rd Feb. 1860	Beams for warping, sizing, dressing, and weaving machines.
BLACKLIDGE, ROBERT - -	2636	29th Oct. 1860	Preparation of materials for sizeing, dressing, or finishing warps, yarns, textile fabrics, or paper.
BLACKWOOD, JOHN - -	738	21st March 1860	Furnace or fire bars.
BLACKWOOD, JOHN - -	2490	13th Oct. 1860	Apparatus for washing yarns or threads.
BLACKWOOD, WILLIAM - -	2490	13th Oct. 1860	Apparatus for washing yarns or threads.
BLAIR, HARRISON - - -	137	19th Jan. 1860	Production of carbonic acid gas.
BLAIR, JOHN - - - -	553	29th Feb. 1860	Machinery for preparing and carding cotton and other fibrous materials.
BLAKE, — - - - -	1134	7th May 1860	Pipe couplings. (Patented by John Henry Johnson.)
BLAKE, JOHN - - - -	1622	4th July 1860	Manufacture of guns and fire-arms of steel.
BLAKE, LYMAN REED - -	2208	13th Sept. 1860	Construction of boots and shoes. (Patented by James Wright.)
BLAKE, OBED - - - -	3117	19th Dec. 1860	Manufacture of that description of glass termed plate glass.
BLAKELEY, JAMES - - -	1586	28th June 1860	Machinery or apparatus for sawing or cutting wood, bone, ivory, stone, or other vegetable, animal, or mineral substances.
BLAKELEY, THOMAS - - -	1243	21st May 1860	Rotatory engines.
BLAKELEY, WILLIAM HENRY	1586	28th June 1860	Machinery or apparatus for sawing or cutting wood, bone, ivory, stone, or other vegetable, animal, or mineral substances.
BLAKELY, ALEXANDER THEO- [PHILUS.	1431	11th June 1860	Rolls or rolling mills.
BLAKELY, THEOPHILUS ALEX- [ANDER.	2793	14th Nov. 1860	An improved method of increasing the strength of steel and wrought iron.
BLASHFIELD, JOHN MARRIOTT	577	1st March 1860	Burning pottery and china wares; kilns employed for such purposes.
BLAXLAND, HENRY - - -	177	24th Jan. 1860	An improved churn.
BLEASDALE, JOSEPH - - -	349	9th Feb. 1860	Machines for preparing and spinning cotton and other fibrous materials.
BLENC, JOHN - - - -	515	25th Feb. 1860	Improvements in printing machines, rendering the same more compact, of less bulk, and more available for use.
BLOCK-STEVENS, ERMELINDE [DE.	1292	25th May 1860	Ladies stays.
BLUZAT, CLAUDE - - - -	1983	15th Aug. 1860	Improved machinery or apparatus for obtaining and applying motive-power.
BLUZAT, JEAN - - - -	1983	15th Aug. 1860	Improved machinery or apparatus for obtaining and applying motive-power.
BOBLIQUE, LÉOPOLD OCTAVE-	2777	13th Nov. 1860	Treatment of fossil and other mineral phosphates of lime.
BODARD, LIES - - - -	1742	18th July 1860	Treatment of gluten in order to manufacture a substance to be employed in printing fabrics and other industrial uses in substitution for albumen. (Patented by Richard Archibald Brooman.)

Bod]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Bon

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
BODMER, RUDOLPH - -	288	3rd Feb. 1860	Machinery for converting into down or fibres capable of being spun, the remnants or cuttings or other waste pieces of silk or other fabrics. (Communicated by Charles Luvandoski.)
BODMER, RUDOLPH - -	1499	20th June 1860	Machinery for washing textile fabrics. (Communicated by Charles Brown and F. Witz.)
BODMER, RUDOLPH - -	1889	4th Aug. 1860	Machinery for converting into down or fibres capable of being spun, the remnants or cuttings or other waste pieces of silk or other fabrics. (Communicated by Charles Luvandoski.)
BODMER, RUDOLPH - -	2818	16th Nov. 1860	Machinery or apparatus for folding, and for folding and stitching sheets of paper and other material. (Communicated by Dr. Carl Bernhard Gruner and Dr. George Adolph Keller.)
BODMER, RUDOLPH - -	3095	17th Dec. 1860	Machinery or apparatus for preventing or modifying the effects of collisions on railways. (Communicated by Giovanni Pagliari.)
BOEDDINGHAUS, JULIUS -	2787	14th Nov. 1860	Means or apparatus employed in weaving. (Patented by William Brookes.)
BOEX, FRANÇOIS - - -	1883	10th July 1860	Ornamenting glass surfaces. (Partly communicated by Pierre Jean de Rudder and Jean Bonnefoy.)
BOILEY, L. & E. freres -	773	24th March 1860	Production of colours for dyeing or printing. (Patented by John Henry Johnson.)
BOISSAU, FRANÇOIS - -	497	24th Feb. 1860	Apparatus for the extraction of pit coal and other mineral products.
BOLL, AUGUSTE - - -	2020	22nd Aug. 1860	Cigarettes and mouth pieces; apparatus used in manufacturing cigarettes.
BOLLAND, CHRISTOPHER -	353	9th Feb. 1860	Fenders and fire guards.
BOLTON, ALFRED SOHIER -	68	11th Jan. 1860	Manufacture of hollow cylinders of copper or alloys of copper, which said cylinders may be used for rollers for printing fabrics, and for such other purposes as the same are or may be applicable to.
BOLTON, FRANCIS SEDDON -	68	11th Jan. 1860	Manufacture of hollow cylinders of copper or alloys of copper, which said cylinders may be used for rollers for printing fabrics, and for such other purposes as the same are or may be applicable to.
BOLTON, GEORGE HARRISON -	408	14th Feb. 1860	A composite soap.
BONELLI, GAETANO - - -	417	15th Feb. 1860	Machinery for weaving figured fabrics.
BONELLI, GAETANO - - -	1815	26th July 1860	Manufacture of felted fabrics and paper. (Communicated by Jean Manzoni.)
BONELLI, GAETANO - - -	2383	2nd Oct. 1860	Improved apparatus for transmitting telegraphic despatches.
BONELLI, GAETANO - - -	2457	9th Oct. 1860	Electric conductors and apparatus for transmitting telegraphic despatches.
BONNATERRE, JOSEPH FRAN- [ÇOIS.	711	17th March 1860	Application of paper to filtering fluids. (Patented by William Clark.)
BONNE, JOSEPH - - -	1904	7th Aug. 1860	Improvements in furnaces intended to work iron ore.
BONNEFOY, JEAN - - -	1883	10th July 1860	Ornamenting glass surfaces. (Patented by François Boex.)



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
BONNET, BENOIT - - -	362	10th Feb. 1860	Improvements in jacquard apparatus to be employed in looms for weaving.
BONNET, IVE - - -	570	1st March 1860	Planing machines for files and other metal objects, straight, curved, or otherwise.
BONNOR, MATHIEU - - -	1107	2nd May 1860	Machinery for rolling bar iron, steel, and other metals or malleable matters.
BOOTH, EDWARD - - -	723	20th March 1860	Power-looms for weaving.
BOOTH, EDWARD - - -	2354	28th Sept. 1860	Power-looms for weaving.
BOOTH, EDWARD - - -	2623	27th Oct. 1860	Extracting colouring matter from vegetable, animal, and other substances, and making decoctions and infusions therefrom.
BOOTH, EDWARD - - -	2624	27th Oct. 1860	Machinery or apparatus for finishing cotton, linen, silk, and other fabrics and materials.
BOOTH, MAJOR - - -	2624	27th Oct. 1860	Machinery or apparatus for finishing cotton, linen, silk, and other fabrics and materials.
BOOTT, JAMES - - -	2006	20th Aug. 1860	Manufacture of various weavings in bobbin net; machinery for the same.
BOQUET, MARIE VIRGINIE -	1689	13th July 1860	Canisters or vessels fitted with moveable and hermetically stopping covers for containing preserved alimentary or other substances.
BOSSELAERS, CHARLES - -	1567	28th June 1860	An improved apparatus for corking bottles, jars, and other vessels. (Communicated by François Vander Hagen.)
BOSSHARDT, HENRY - - -	231	30th Jan. 1860	Machinery for treating cotton and other fibrous materials.
BOSSUAT, EDMÉ GERMAIN -	2090	29th Aug. 1860	Apparatus for manufacturing embossed or figured fabrics in colours. (Patented by Richard Archibald Brooman.)
BOSTICK, JOHN REED - - -	586	3rd March 1860	Manufacture of artificial fuel. (Patented by John Henry Johnson.)
BOSTOCK, GEORGE WESTON -	364	10th Feb. 1860	Improved apparatus for taking the measure of the human body.
BOTTOMLEY, JOHN - - -	490	23rd Feb. 1860	Means or apparatus used in spinning fibrous substances.
BOTTOMLEY, JOHN - - -	1261	22nd May 1860	Means or apparatus employed in spinning wool and other fibrous substances.
BOUCHARD, ETIENNE CHARLES [ZACHERIE.]	426	16th Feb. 1860	Manufacture of gas; apparatus for the same. (Patented by William Clark.)
BOUCHET, HENRY - - -	1196	15th May 1860	Preparation of vegetable matters, as a pulp for the manufacture of paper. (Patented by Julien Denis.)
BOUET, ANTOINE - - -	2162	7th Sept. 1860	An improved impermeable oil varnish. (Patented by Charles Stevens.)
BOULARD, LAURENT MARIE -	938	14th April 1860	An improved apparatus for preventing or destroying incrustations in steam-boilers.
BOULET, LOUIS - - -	2439	8th Oct. 1860	Cleaning or separating gutta-percha from extraneous matters; apparatus for the same. (Patented by William Clark.)
BOULET, LOUIS - - -	2440	8th Oct. 1860	Driving straps and belts. (Patented by William Clark.)
BOULICAULT, PIERRE - - -	2575	22nd Oct. 1860	Feeding steam-boilers. (Patented by William Edward Gedge.)
BOULTON, JAMES BOWYER [D'ARCY]	49	7th Jan. 1860	Slide valves.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
BOULTON, WILLIAM - -	2339	26th Sept. 1860	An improvement in the construction of pot- ters' drying stoves and workshops, and in apparatus for preparing the clay for the moulds used by the potter, so as to render the process of drying more effectual.
BOURDELIN, JEAN PIERRE -	2394	3rd Oct. 1860	Healds or heddles employed in looms for weaving. (Patented by Edward Thomas Hughes.)
BOURET, JEAN LOUIS ANTOINE [MARIE.	2567	20th Oct. 1860	Manufacture of articles of jewellery; appa- ratus for the same. (Patented by William Clark.)
BOURN, — - - -	1873	3rd Aug. 1860	An improved process in the vulcanization of india-rubber and other similar substances under pressure. (Patented by John Talbot Pitman.)
BOURN, — - - -	1875	3th Aug. 1860	An improved press. (Patented by John Talbot Pitman.)
BOURREL, AUGUSTE - -	603	5th March 1860	Manufacture of pipes for smoking. (Patented by Richard Archibald Broo- man.)
BOUSFIELD, GEORGE TOMLIN- [SON.	407	14th Feb. 1860	Apparatus for separating impurities from grain. (Communicated by A. H. Dixon.)
BOUSFIELD, GEORGE TOMLIN- [SON.	1088	30th April 1860	Apparatus for working the valves of steam- engines. (Communicated by Edward N. Dickerson.)
BOUSFIELD, GEORGE TOMLIN- [SON.	1411	8th June 1860	Machinery for the manufacture of barbed and other needles for knitting and sewing. (Communicated by J. J. Greenough.)
BOUSFIELD, GEORGE TOMLIN- [SON.	2062	27th Aug. 1860	Thrust bearings for propeller shafts and for other purposes. (Communicated by E. S. Renwick.)
BOUSFIELD, GEORGE TOMLIN- [SON.	2063	27th Aug. 1860	Building water craft. (Communicated by E. S. Renwick.)
BOUSFIELD, GEORGE TOMLIN- [SON.	2064	27th Aug. 1860	Improvements in stuffing-boxes and the packing thereof for the piston rods of steam-engines, and for other purposes. (Communicated by E. S. Renwick.)
BOUSFIELD, GEORGE TOMLIN- [SON.	2065	27th Aug. 1860	Surface blow-offs for steam-boilers. (Communicated by E. S. Renwick.)
BOUSFIELD, GEORGE TOMLIN- [SON.	2469	10th Oct. 1860	An eraser and pencil sharpener. (Communicated by J. J. Greenough.)
BOUSSOIS, FRANCOIS JOSEPH [EDOUARD DUCLOS DE.	1282	23rd May 1860	Manufacture of tubes, hollow axles, shafts, gun barrels, masts, and other tubular metal articles.
BOUSSOIS, FRANÇOIS JOSEPH [EDOUARD DUCLOS DE.	1283	23rd May 1860	Treatment of bituminous rocks for the ex- traction of bitumen therefrom; application of the residuum to various useful purposes.
BOUTET, CHARLES THOMAS -	79	11th Jan. 1860	A new mover applicable to all branches of industry, and designed to replace the steam:—the Aëro-hydraulic mover.
BOWDITCH, WILLIAM RENWICK	1337	31st May 1860	Purification of coal gas and of coal oils.
BOWDITCH, WILLIAM RENWICK	2882	24th Nov. 1860	Purification of coal gas and of coal oils.
BOWEN, HENRY - - -	782	26th March 1860	An improved standard gas-meter.
BOWEN, JOHN JAMES - -	1452	13th June 1860	Soldering irons heated by gas.
BOWER, ANTHONY - - -	140	19th Jan. 1860	Ship building.
BOWER, DAVID FARRER - -	2390	3rd Oct. 1860	Manufacture of iron and cast steel.
BOWER, GEORGE - - -	1098	1st May 1860	Metallic pistons.

Bow]

## ALPHABETICAL INDEX OF PATENTEES

[Bra

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
BOWER, GEORGE - - -	1380	5th June 1860	Apparatus for manufacturing, controlling, and regulating the flow of gas.
BOWER, JOSEPH - - -	2390	3rd Oct. 1860	Manufacture of iron and cast steel.
BOWLER, JOHN COBB - - -	2115	1st Sept. 1860	Obtaining motive-power.
BOWLES, EDWARD - - -	2720	6th Nov. 1860	Apparatus for ploughing land.
BOWLEY, KANZOW THOMAS -	393	13th Feb. 1860	An improved knee-cap for military, sporting or other purposes.
BOYD, JAMES EDWARD - -	310	6th Feb. 1860	Carriages and other conveyances used for the conveyance of children, adults, and invalids.
BOYD, JAMES EDWARD - -	523	25th Feb. 1860	Improvements in and transmitting motive-power from certain parts to certain other parts of lawn mowing, grass cutting, and other agricultural, horticultural, and farming machines.
BOYD, JAMES EDWARD - -	2122	3rd Sept. 1860	Machines used for cutting, scattering, and collecting vegetable and other substances.
BOYD, ROBERT ANDREW - -	1533	23rd June 1860	Singeing or burning the hair off pigs.
BOYÉ, ADOLPHE - - -	266	2nd Feb. 1860	Improved machinery for stripping and extracting the filaments of textile plants, and applicable to the treatment of fibro-ligneous matters in general. (Patented by Marc Antoine François Mennons.)
BOYLE, THOMAS - - -	993	20th April 1860	Producing multiplied and many-coloured reflections of light from one focus of incidence.
BOYLE, THOMAS - - -	2193	11th Sept. 1860	Preparing machinery for flax and other fibrous substances.
BOYMAN, RICHARD BOYMAN -	1155	10th May 1860	Applying steam or other expansive prime movers by action and reaction for rotary motion and propulsion, and machinery for the purpose.
BOYS, HORACE - - -	2611	26th Oct. 1860	Preparing the bine and leaves of the hop plant.
BRABY, JAMES, junior - -	1481	19th June 1860	Improved machinery for lifting or breaking up roads or ways, crushing clods, and scarifying or tilling land.
BRADBURY, CHARLES TIMOTHY	2239	15th Sept. 1860	Manufacture of damasks and similar fancy goods.
BRADBURY, GEORGE FRANCIS -	2242	15th Sept. 1860	Improvements in binding and folding guides employed in sewing-machines.
BRADBURY, WILLIAM - - -	1786	24th July 1860	A certain improved compound or compounds to be used as a substitute for gunpowder.
BRADBURY, WILLIAM - - -	2642	29th Oct. 1860	A certain compound or certain compounds to be used as a substitute for gunpowder.
BRADOCK, JOHN - - -	715	19th March 1860	Certain improvements in or applicable to steam-engines.
BRAGGE, WILLIAM - - -	1698	14th July 1860	Manufacture of tyres for railway wheels.
BRAMAN, W. E. - - -	794	27th March 1860	Sewing-machines. (Patented by David Millard.)
BRANDT, LOUIS - - -	2840	19th Nov. 1860	Improved means of and apparatus for supplying air to the furnace or furnaces or to the fire-rooms of steam vessels, by means of the paddle wheels. (Patented by William Edward Newton.)



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
BRAY, JOHN EVANS - -	1708	14th July 1860	An improved manufacture of waterproof leather. (Patented by William Edward Newton.)
BRAY, JOSEPH - - -	1161	11th May 1860	Machinery or apparatus for spinning cotton, wool, silk, flax, and other fibrous materials.
BRAYNARD, THOMAS L. - -	1610	3rd July 1860	Apparatus for working, training, and leveling cannon on board of vessels and in fortifications, redoubts, and other places. (Communicated by John J. Walsh.)
BRAYTON, ROBERT - - -	2529	17th Oct. 1860	An improved mode of preserving hops and fitting them for storage and transportation. (Patented by William Edward Newton.)
BREACH, JOHN ROBERT - -	822	30th March 1860	An improved household fire-escape.
BREARLEY, THOMAS - - -	1680	12th July 1860	Machinery for producing and revivifying animal charcoal.
BREESE, CHARLES - - -	1423	9th June 1860	Metal bedsteads.
BREFFIT, EDGAR - - -	2599	25th Oct. 1860	Mode of packing bottles.
BRÉGUET, LOUIS FRANÇOIS [CLÉMENT.	819	29th March 1860	Chronometers. (Patented by John Henry Johnson.)
BREITTMAYER, AIMÉ LOUIS [EUGÈNE.	324	7th Feb. 1860	Improvements in machinery for and in engraving the metallic surfaces of printing rollers or cylinders.
BRÉMOND, JEAN JOSEPH LOUIS	933	14th April 1860	Spindles and other parts of spinning looms.
BRENNAND, CABLE - - -	2505	15th Oct. 1860	Ornamenting lappets, petticoats, window curtains, blinds, and similar articles.
BRENNAND, JOHN - - -	2505	15th Oct. 1860	Ornamenting lappets, petticoats, window curtains, blinds, and similar articles.
BRESSLAUER, — - -	1973	15th Aug. 1860	Manufacture or preparation of indigo. (Patented by Henri Bernoulli Barlow.)
BRETHON, LOUIS JULIEN -	269	2nd Feb. 1860	An improved press for the compression of bricks, tiles, and similar articles of either plastic or other suitable compressible materials.
BRICKHILL, JAMES - - -	1111	3rd May 1860	Screw propellers.
BRIDGES, WILLIAM - - -	604	5th March 1860	Manufacture of elastic bands.
BRIDGETT, WILLIAM - -	967	17th April 1860	Regeneration and expansion of steam applicable to steam-engines or for other purposes.
BRIDGMAN, EDWARD - - -	2009	20th Aug. 1860	Construction of wet gas-meters.
BRIDLE, HENRY - - -	887	9th April 1860	Refrigerators.
BRIGGS, EDWARD - - -	1821	27th July 1860	Application of spun silk waste made in winding and weaving to manufacturing purposes, and improvements in machinery employed in operating on such silk waste.
BRIGGS, RICHARD - - -	709	17th March 1860	A new or improved washing-machine.
BRIGGS, THOMAS - - -	788	27th March 1860	Manufacture of oil cloth or oil paper to be employed for packing purposes, or for coating or covering surfaces; apparatus connected therewith.
BRIGGS, THOMAS - - -	2287	20th Sept. 1860	Manufacture of oil-cloth or oil paper to be employed for packing purposes, or for coating or covering surfaces; apparatus connected therewith.
BRIGHAM, JOHN - - -	213	27th Jan. 1860	Machinery or apparatus for sowing or depositing seeds in land.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
BRIGHT, (SIR) CHARLES [TILSTON.]	465	20th Feb. 1860	Working and testing telegraphic conductors; apparatus connected therewith.
BRIGHT, HENRY - - -	2434	8th Oct. 1860	An improved guard or cut water for ships or vessels, for the purpose of lessening or preventing injurious effects resulting from collision.
BRINDLEY, WILLIAM - -	197	26th Jan. 1860	Manufacture of paper-board known by paper makers as "middles," extensively used in the manufacture of boxes.
BRINKLEY, JOHN - - -	3118	19th Dec. 1860	Improvements in furnaces for consuming or preventing the emission of smoke.
BINTON, JOHN - - -	3185	29th Dec. 1860	Manufacture of pile carpets, rugs, and other pile fabrics.
BRISSON, PIERRE ETIENNE -	1908	7th Aug. 1860	Mills for grinding corn and other grain. (Patented by Richard Archibald Brooman.)
BRITTAN, FREDERICK SAMUEL	2031	23rd Aug. 1860	Manufacture of cloth; preparing and cleaning woollen flock. (Patented by Charles Weiss.)
BRITTEN, BASHLEY - -	567	1st March 1860	Projectiles.
BROAD, JOHN - - -	1759	20th July 1860	An apparatus for economizing coal and other fuel to be used with hot or cold blast in the smelting of iron ores and re-melting of pig iron.
BROADHURST, JOHN BUTLER -	1607	3rd July 1860	Heating water for steam-boilers.
BROCCHI, AUGUSTE - -	2414	5th Oct. 1860	An improved waterproof cement or composition.
BRODIE, JAMES - - -	1021	24th April 1860	Improvements upon latches and bolts employed in locks and other fastenings.
BROEL, JOSEPH - - -	596	5th March 1860	Manufacture of soap. (Communicated by A. B. Devine.)
BROGLIA, CHARLES - -	948	16th April 1860	An improved apparatus to be employed in the roasting and preparation of coffee, cocoa, and chicory.
BROKENSHIRE, JOHN - -	2385	2nd Oct. 1860	Pumps.
BROMWICH, ROBERT - -	1401	7th June 1860	An improved cock for drawing off or regulating the flow of liquids or fluids.
BROOKES, THOMAS - - -	2344	27th Sept. 1860	Manufacture of the joints of brooches and other similar dress fastenings.
BROOKES, WILLIAM - - -	2787	14th Nov. 1860	Means or apparatus employed in weaving. (Communicated by Julius Boeddinghaus.)
BROOKS, EDGAR - - -	238	30th Jan. 1860	New or improved machinery to be used in the manufacture of guns and pistols, and for shaping metallic and non-metallic substances for other purposes.
BROOMAN, RICHARD ARCHI- [BALD.]	118	17th Jan. 1860	Improvements in extracting substances from cereal grains and some of their products, and the application of the substances extracted. (Communicated by Benjamin Paraf Javal.)
BROOMAN, RICHARD ARCHI- [BALD.]	253	31st Jan. 1860	Certain arrangements of machinery for forming slivers as they come from the carding-engine into threads, and for winding the threads on bobbins. (Communicated by Louis Victor Lemaigen.)
BROOMAN, RICHARD ARCHI- [BALD.]	290	3rd Feb. 1860	Manufacture of iron; furnaces to be employed therein. (Communicated by Ernest Tourangin.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
BROOMAN, RICHARD ARCHI- [BALD.	291	3rd Feb. 1860	Tanning. (Communicated by Laurent Rocher.)
BROOMAN, RICHARD ARCHI- [BALD.	416	15th Feb. 1860	Manufacture of fabrics suitable for carpets, hangings, furniture, stuffs, and the like. (Communicated by Bernard Landwerlin and Theodore Dopff.)
BROOMAN, RICHARD ARCHI- [BALD.	463	20th Feb. 1860	Stamping-presses. (Communicated by Theophile Canier and Adolphe Kunkler.)
BROOMAN, RICHARD ARCHI- [BALD.	493	23rd Feb. 1860	An improved method of producing documents suitable for bank notes and other instruments of value, in order to prevent forgery thereof. (Communicated by Leopold Eidlitz.)
BROOMAN, RICHARD ARCHI- [BALD.	504	24th Feb. 1860	Quills, spools or bobbins. (Communicated by Stanislas Vigoureux.)
BROOMAN, RICHARD ARCHI- [BALD.	585	2nd March 1860	Construction of naves or bosses for wheels. (Communicated by Gustave Hamoir.)
BROOMAN, RICHARD ARCHI- [BALD.	603	5th March 1860	Manufacture of pipes for smoking. (Communicated by Auguste Bourrel.)
BROOMAN, RICHARD ARCHI- [BALD.	708	17th March 1860	Machinery for dressing warp threads. (Communicated by Jean Victor Alfred Ruzé.)
BROOMAN, RICHARD ARCHI- [BALD.	843	2nd April 1860	Buttons. (Communicated by Henry Dollier.)
BROOMAN, RICHARD ARCHI- [BALD.	892	9th April 1860	A new woven fabric, and method of manufacturing the same. (Communicated by Louis Nicolas Guillaume Dupont.)
BROOMAN, RICHARD ARCHI- [BALD.	972	18th April 1860	A method of and apparatus for communicating to railway passengers the names of the stations which the train successively approaches. (Communicated by Alfred de Banville and Emile Duclos.)
BROOMAN, RICHARD ARCHI- [BALD.	1012	23rd April 1860	Milk cans. (Communicated by Louis Pierre Huard.)
BROOMAN, RICHARD ARCHI- [BALD.	1013	23rd April 1860	Buoys. (Communicated by Francis Charles Vannet.)
BROOMAN, RICHARD ARCHI- [BALD.	1054	26th April 1860	Lamps. (Communicated by Jean Jules Morel and Louis Augustin Guillemont.)
BROOMAN, RICHARD ARCHI- [BALD.	1149	9th May 1860	Horse mills. (Communicated by William Wells-Grollier.)
BROOMAN, RICHARD ARCHI- [BALD.	1165	11th May 1860	Driving or propelling railway rolling stock. (Communicated by Edouard Gouin.)
BROOMAN, RICHARD ARCHI- [BALD.	1222	17th May 1860	An improved mowing-machine. (Communicated by Arthur Legros.)
BROOMAN, RICHARD ARCHI- [BALD.	1305	26th May 1860	Treating certain animal substances in order to obtain albuminous, gummy, glutinous, and glairy products, and fat. (Communicated by Benjamin Paraf Javal.)
BROOMAN, RICHARD ARCHI- [BALD.	1463	15th June 1860	Improvements in desiccating substances, and in neutralizing or retaining any foetid gases which may be evolved in the process. (Communicated by Messrs. Lége and Danguy.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
BROOMAN, RICHARD ARCHI- [BALD.]	1487	19th June 1860	Locks. (Communicated by Auguste Theodore Baudrit.)
BROOMAN, RICHARD ARCHI- [BALD.]	1528	22nd June 1860	Horse rakes. (Communicated by Gustave Hamoir.)
BROOMAN, RICHARD ARCHI- [BALD.]	1598	2nd July 1860	Manufacture of hats. (Communicated by Auguste Durand.)
BROOMAN, RICHARD ARCHI- [BALD.]	1597	2nd July 1860	Harrows. (Communicated by J. C. C. Meyn.)
BROOMAN, RICHARD ARCHI- [BALD.]	1605	3rd July 1860	An improved fabric suitable for holding charges of gunpowder. (Communicated by Heinrich Joachim Natorp.)
BROOMAN, RICHARD ARCHI- [BALD.]	1651	9th July 1860	Railway breaks. (Communicated by Jean Jan called Paulet.)
BROOMAN, RICHARD ARCHI- [BALD.]	1719	16th July 1860	An improved clip for holding tickets and other articles. (Communicated by Paul Ducasse.)
BROOMAN, RICHARD ARCHI- [BALD.]	1742	18th July 1860	Treatment of gluten in order to manufacture a substance to be employed in printing fabrics and other industrial uses in substitution for albumen. (Communicated by Lies Bodard.)
BROOMAN, RICHARD ARCHI- [BALD.]	1778	23rd July 1860	A method of and machinery for goffering or impressing, colouring and gilding, or otherwise covering with metal, leather and fabrics and substances in a sheet state. (Communicated by Jacques Michel Dulud.)
BROOMAN, RICHARD ARCHI- [BALD.]	1824	27th July 1860	Belts. (Communicated by Henri Dollier.)
BROOMAN, RICHARD ARCHI- [BALD.]	1825	27th July 1860	Manufacture of linseed oil; apparatus for the same. (Communicated by Joseph Poole Pirsson.)
BROOMAN, RICHARD ARCHI- [BALD.]	1908	7th Aug. 1860	Mills for grinding corn and other grain. (Communicated by Pierre Etienne Brisson.)
BROOMAN, RICHARD ARCHI- [BALD.]	1914	8th Aug. 1860	An improved excavating machine for boring tunnels and performing other excavating operations. (Communicated by Messrs. Hippolyte Amédée Buquet and Raoul Jacques Marie Destrem and Jean Baptiste Valauri.)
BROOMAN, RICHARD ARCHI- [BALD.]	1915	8th Aug. 1860	Apparatus for burning gas in carriages, ships, and other moving structures. (Communicated by Pierre Hugon.)
BROOMAN, RICHARD ARCHI- [BALD.]	2088	27th Aug. 1860	Melodeons and similar keyed musical instruments. (Communicated by Joseph Poole Pirsson.)
BROOMAN, RICHARD ARCHI- [BALD.]	2090	29th Aug. 1860	Apparatus for manufacturing embossed or figured fabrics in colours. (Communicated by Edme Germain Bossuat.)
BROOMAN, RICHARD ARCHI- [BALD.]	2291	20th Sept. 1860	Machinery for printing shawls and other fabrics. (Communicated by Ignace Michel Firnstahl.)
BROOMAN, RICHARD ARCHI- [BALD.]	2484	12th Oct. 1860	Machinery for cutting and packing cigars. (Communicated by Julius de Bary.)



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
BROOMAN, RICHARD ARCHI- [BALD.]	2498	13th Oct. 1860	Lenses. (Communicated by Charles C. Harrison.)
BROOMAN, RICHARD ARCHI- [BALD.]	2571	22nd Oct. 1860	Improvements in apparatuses for evaporating and concentrating, specially applicable to the manufacture of sugar. (Communicated by Jean Baptiste Dureau.)
BROOMAN, RICHARD ARCHI- [BALD.]	2604	25th Oct. 1860	Apparatuses for raising liquids. (Communicated by Jacques Taillandier, François Raynaud, and Jean Jan called Paulet.)
BROOMAN, RICHARD ARCHI- [BALD.]	2616	26th Oct. 1860	Uniting water, gas, and other pipes and tubes. (Communicated by Athalis Delaporte.)
BROOMAN, RICHARD ARCHI- [BALD.]	2687	2nd Nov. 1860	Machinery for felting threads and other filamentous substances. (Communicated by Ferdinand Raphael Tavernier.)
BROOMAN, RICHARD ARCHI- [BALD.]	2727	6th Nov. 1860	Manufacture of forks and spoons. (Communicated by Adolphe Joseph Coque and Alexandre François Chavet.)
BROOMAN, RICHARD ARCHI- [BALD.]	2740	7th Nov. 1860	Liquid and fluid meters. (Communicated by Louis Constant Uhler.)
BROOMAN, RICHARD ARCHI- [BALD.]	2807	15th Nov. 1860	An improvement in the manufacture and in the welding of steel and wrought cast iron. (Communicated by Charles Funk.)
BROOMAN, RICHARD ARCHI- [BALD.]	2808	15th Nov. 1860	Sword bayonets and other swords. (Communicated by François Jules Man- ceaux.)
BROOMAN, RICHARD ARCHI- [BALD.]	2821	16th Nov. 1860	Joining or connecting together pipes and tubes. (Communicated by Louis Alexandre Farjon.)
BROOMAN, RICHARD ARCHI- [BALD.]	2842	20th Nov. 1860	Stoppers for bottles, jars, and other like articles; partly applicable as fastenings. (Communicated by Louis Alexandre Farjon.)
BROOMAN, RICHARD ARCHI- [BALD.]	2864	22nd Nov. 1860	Apparatus for communicating continuous rotary motion from manual power. (Communicated by Guillaume Auguste Schuchard and Ferdinand Frederic Bentel.)
BROOMAN, RICHARD ARCHI- [BALD.]	2985	3rd Dec. 1860	Valves for closets and other receptacles. (Communicated by Pierre Guillaume and Frederic Hippolyte Ouin.)
BROOMAN, RICHARD ARCHI- [BALD.]	3026	10th Dec. 1860	Implements for digging and breaking up the soil. (Communicated by Donald Mann.)
BROOMAN, RICHARD ARCHI- [BALD.]	3109	18th Dec. 1860	Shears for cutting sheet metal and other materials. (Communicated by Jean Momet.)
BROOMAN, RICHARD ARCHI- [BALD.]	3120	19th Dec. 1860	Irons for ironing. (Communicated by Joachim Etienne Daniel Fossard.)
BROOMAN, RICHARD ARCHI- [BALD.]	3121	19th Dec. 1860	Treatment of caoutchouc and the employment of a product obtained thereby for lubricating and coating bodies. (Communicated by J. D. Duhoussat and P. E. Thomas.)
BROOMAN, RICHARD ARCHI- [BALD.]	3170	27th Dec. 1860	Improvements in axle boxes and in naves of wheels. (Communicated by Pierre Joseph Bertrand.)

[Bro]

## ALPHABETICAL INDEX OF PATENTEES

[Bro]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
BROTHERHOOD, PETER - -	710	17th March 1860	An improved method of generating steam in locomotive, stationary, marine, or any other form of steam-boiler.
BROUGH, NEHEMIAH - -	2637	29th Oct. 1860	New or improved fastenings for articles of dress and for fastening belts and bands generally.
BROUGH, ROBERT - - -	947	16th April 1860	Certain improvements in machinery for the manufacture of spikes, nails, pins, and rivets, and which said improvements are also applicable for partially forming or making chain links, holdfasts, staples, spouting-hooks, and other such like articles formed of iron or other metal by forging, pressing, rolling, or drawing.
BROUGH, ROBERT - - -	2695	3rd Nov. 1860	New or improved machinery for the manufacture of nails, spikes and staples.
BROWN, — - - - -	1873	3rd Aug. 1860	An improved process in the vulcanization of india-rubber and other similar substances under pressure. (Patented by John Talbot Pitman.)
BROWN, — - - - -	1875	3rd Aug. 1860	An improved press. (Patented by John Talbot Pitman.)
BROWN, BURDETT LAMBTON -	2499	13th Oct. 1860	Apparatus used for supplying steam from steam-boilers or generators.
BROWN, CHARLES - - -	1499	20th June 1860	Machinery for washing textile fabrics. (Patented by Rudolph Bodmer.)
BROWN, CHARLES FREDERICK	1068	27th April 1860	Ordnance and fire-arms. (Patented by William Edward Newton.)
BROWN, HENRY - - -	1832	28th July 1860	Manufacture of a certain cloth or fabric commonly called "Utrecht velvet."
BROWN, HENRY EDWARD -	237	30th Jan. 1860	Axles for carriages.
BROWN, JAMES - - -	1357	2nd June 1860	Improvements in cannon and other ordnance.
BROWN, JAMES - - -	1395	7th June 1860	Fire bars, retorts, and other appliances, connected with furnaces, &c.
BROWN, JAMES - - -	1805	25th July 1860	Improvements in the manufacture of plates for coating or covering and strengthening ships and other structures, and in fixing the same.
BROWN, JOHN - - -	728	20th March 1860	Improvements in window sashes, frames, and doors, in order to render them (when closed) air, dust, and water-tight.
BROWN, JOHN - - -	1102	2nd May 1860	Spouts or tubes of lubricating cans.
BROWN, WILLIAM - - -	1172	11th May 1860	Brick making machines.
BROWN, WILLIAM FULFORD -	865	5th April 1860	An invention for a more convenient and effectual method of attaching and securing brooches and such like articles, and for improved fastenings to be used therewith and for other purposes.
BROWN, WILLIAM FULFORD -	2343	27th Sept. 1860	An invention for a more convenient and effectual method of attaching and securing brooches and such like articles, and for improved fastenings to be used therewith, and for other purposes.
BROWN, WILLIAM HOGG -	1797	25th July 1860	Applying springs to locomotive engines and and to railway and other carriages. (Patented by Montague Richard Levenson.)
BROWNE, BENJAMIN - -	1105	2nd May 1860	A self-heating ironing apparatus. (Communicated by Charles Jean Eugene Baptiste Cailloie.)



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
BROWNLIE, ARCHIBALD -	73	11th Jan. 1860	Treatment of sewerage matters; apparatus employed therein.
BRUCE, GEORGE BARCLAY -	2549	18th Oct. 1860	Rail and tramways.
BRUCE, JAMES ANDREW -	2796	14th Nov. 1860	Hay racks.
BRUMLEU, LUDWIG - -	731	21st March 1860	Manufacture of oxychloride of lead. (Patented by Jane Ann Herbert.)
BRUNIER, GEORGES - -	1213	17th May 1860	Cylinders and pistons of steam and other engines or machines propelled by aëiform fluids. (Patented by Marc Antoine François Mennons.)
BRUNIER, LOUIS - - -	445	17th Feb. 1860	Obtaining motive-power by compressed air and by its successive and ascending pressures; apparatus employed therein. (Patented by Pierre Lavenas.)
BRUNNER, WILLIAM - -	1790	24th July 1860	An improved apparatus for increasing the illuminating power of coal gas, also for economizing the consumption thereof, and for regulating the pressure from street mains.
BRYANT, WILBERFORCE - -	2675	1st Nov. 1860	Treating oily and fatty substances.
BRYDEN, JOHN MILLER - -	556	29th Feb. 1860	Mountings for window blinds.
BRYDEN, WILLIAM CORBET -	556	29th Feb. 1860	Mountings for window blinds.
BUCHANAN, JAMES - - -	818	29th March 1860	Manufacture and finishing of heddles or healds for weaving; machinery or apparatus employed therein.
BUCHHOLZ, LUDWIG - -	2342	26th Sept. 1860	Carbonizing saw-dust and other finely divided vegetable substances; obtaining certain useful products by such carbonization; apparatus connected therewith.
BUCKLEY, JAMES - - -	1786	24th July 1860	A certain improved compound or compounds to be used as a substitute for gunpowder.
BUCKLEY, JAMES - - -	2642	29th Oct. 1860	A certain compound or certain compounds to be used as a substitute for gunpowder.
BUCKLEY, ROBERT - - -	2964	3rd Dec. 1860	Carding-engines.
BUCKWELL, WILLIAM - -	1004	21st April 1860	Manufacture of slabs, plates, and panels for the transmission of light.
BUCKWELL, WILLIAM - -	1005	21st April 1860	An improved mode of operating, recording, or printing telegraphic apparatus.
BUCKWELL, WILLIAM - -	1052	26th April 1860	Construction of iron roofs and bridges; apparatus to be used in their erection.
BUCKWELL, WILLIAM - -	1513	21st June 1860	Moulding blocks, slabs, pipes and other articles; apparatus to be employed therein.
BUCKWELL, WILLIAM GEORGE	1381	5th June 1860	Steam-boiler and other furnaces.
BUDD, JAMES PALMER - -	2527	17th Oct. 1860	Manufacture of terne plates.
BUDDEN, JOHN LEGGETT -	2317	22nd Sept. 1860	Improvements in the application of steam or highly rarefied gas or other aëiform fluid to obtain motive-power for propelling and other purposes. (Communicated by Woodford Pilkington.)
BUFFON, BENJAMIN NA- DAULT DE.]	3193	31st Dec. 1860	Apparatuses for clarifying and purifying water and other liquids.
BULL, WILLIAM - - -	2660	31st Oct. 1860	Improvements in the permanent way of railways, and in connection therewith.
BULLOUGH, JAMES - - -	1064	27th April 1860	Looms for weaving.
BULLOUGH, JAMES - - -	2375	2nd Oct. 1860	Looms.



Bul]

## ALPHABETICAL INDEX OF PATENTEEES

[Bur

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
BULMER, WILLIAM - -	2904	26th Nov. 1860	Apparatuses for the manufacture and for the drying of bricks, tiles, and other like ware.
BUQUET, HIPPOLYTE AMÉDÉE	1914	8th Aug. 1860	An improved excavating machine for boring tunnels and performing other excavating operations. (Patented by Richard Archibald Brooman.)
BURBANK, MARIA LOUISE -	243	30th Jan. 1860	Construction of soldering irons. (Patented by William Edward Newton.)
BURCH, JOSEPH - - -	2558	19th Oct. 1860	Construction of boilers for generating steam and other heating purposes.
BURCH, JOSEPH - - -	2623	27th Oct. 1860	Extracting colouring matter from vegetable, animal, and other substances, and making decoctions and infusions therefrom.
BURDEN, HENRY - - -	127	18th Jan. 1860	Machinery or apparatus for manufacturing shoes for horses and other animals. (Patented by George Jones Barker and Thomas Barker.)
BURDESS, ADAM - - -	2223	14th Sept. 1860	Railway breaks.
BUREAU, LOUIS CYRILLE -	451	18th Feb. 1860	Production of gas for lighting and heating ; apparatus employed therein. (Patented by Michael Henry.)
BURGESS, WILLIAM - -	928	13th April 1860	Mowing and reaping machines.
BURKE, MICHAEL - - -	2240	15th Sept. 1860	An improved spring sacking or foundation for a bed, mattress, or other like article especially adapted for ships' use, barracks, hospitals, and military camps, applicable also for domestic dwellings.
BURKE, WILLIAM HENRY, (senior.)	2152	6th Sept. 1860	A method of preparing fabrics composed of or containing caoutchouc to enable them to resist the action of colours and varnishes containing oil.
BURKE, WILLIAM HENRY, (junior.)	2152	6th Sept. 1860	A method of preparing fabrics composed of or containing caoutchouc to enable them to resist the action of colours and varnishes containing oil.
BURLEY, ROBERT - - -	89	12th Jan. 1860	Handles for hammers, mallets, picks, and similar tools.
BURLEY, THOMAS HALEY -	250	31st Jan. 1860	Improved machinery for cutting dovetails. (Patented by William Edward Newton.)
BURLEY, WILLIAM - - -	282	3rd Feb. 1860	A new or improved method of attaching lamps and whip sockets to carriages.
BURN, CHARLES - - -	2336	26th Sept. 1860	Improvements in the tram-rails of street railways to prevent horses slipping thereon.
BURN, CHARLES - - -	2337	26th Sept. 1860	An improved tram-rail for street railways.
BURN, CHARLES - - -	2512	15th Oct. 1860	Tram-rails for street railways.
BURN, CHARLES - - -	2513	15th Oct. 1860	Permanent way of street railways.
BURNETT, CHARLES - -	2517	16th Oct. 1860	Breech or muzzle loading ordnance.
BURNETT, WILLIAM HICKLING	1271	23rd May 1860	Improvements in electric telegraphs and in apparatuses employed therewith, a part of which improvements is applicable to the winding of clockwork.
BURNHAM, EGBERT REUBEN -	3187	29th Dec. 1860	Apparatus or machinery for stamping, shaping, or forming certain kinds of goods manufactured of india-rubber, gutta-percha, and like substances.
BURNS, EDWARD - - -	2541	18th Oct. 1860	Steam-engines.

Bur]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Byr

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
BURRELL, JOHN - - -	2222	14th Sept. 1860	Manufacture of woven materials applicable as crinoline and other articles of ladies dress.
BURROWS, BENJAMIN - - -	121	17th Jan. 1860	Looms for weaving narrow fabrics.
BURROWS, GEORGE - - -	1441	12th June 1860	Manufacture of figured lace made on bobbin net machines.
BURRUP, JOSEPH - - -	907	11th April 1860	Ploughs.
BURSTALL, THOMAS - - -	949	16th April 1860	Improved machinery for manufacturing bricks from clay alone or mixed with other materials.
BURT, HENRY - - -	1508	21st June 1860	Bolts for fastening doors, gates, and windows. (Patented by William Pitt Eastman.)
BURT, LORIN - - -	1080	30th April 1860	Manufacture of goods coated with india-rubber and other gums; apparatus to be employed therein. (Patented by Hiram Hutchinson.)
BURTON, ROBERT - - -	2889	24th Nov. 1860	Apparatus for raising, lowering, and hauling weights.
BURY, SAMUEL - - -	436	17th Feb. 1860	Machinery or apparatus for embossing and finishing textile fabrics or other like surfaces.
BUSH, WILLIAM - - -	568	1st March 1860	Manufacturing granulated Seidlitz powder.
BUSHELL, DANIEL - - -	917	12th April 1860	An improved agricultural machine.
BUSHELL, JONAS - - -	917	12th April 1860	An improved agricultural machine.
BUSHELL, JOSEPH - - -	917	12th April 1860	An improved agricultural machine.
BUSHELL, SAMUEL - - -	917	12th April 1860	An improved agricultural machine.
BUSHELL, WILLIAM - - -	917	12th April 1860	An improved agricultural machine.
BUTLER, GEORGE - - -	1645	9th July 1860	Apparatus for stamping, printing, and embossing.
BUTLER, SAMUEL - - -	2528	17th Oct. 1860	Manufacture of fabrics in twist lace machinery.
BUTLIN, WILLIAM - - -	1000	21st April 1860	Apparatus for super-heating the steam, and heating the feed water in steam-boilers.
BUTLIN, WILLIAM - - -	2839	19th Nov. 1860	Machinery or apparatus for stamping and ramming, to be chiefly applied to and used for the purpose of paving.
BUTTERWORTH, ELLIS - -	1144	9th May 1860	Machinery for preparing and spinning cotton and other fibrous substances.
BUTTON, — - - -	1134	7th May 1860	Pipe couplings. (Patented by John Henry Johnson.)
BUXTON, WILLIAM - - -	616	6th March 1860	Safety cages for mines.
BUYER, JEAN BAPTISTE JOSEPH [DE.	1145	9th May 1860	A new system of cast iron cart wheels.
BYRN, MARCUS LAFAYETTE -	978	18th April 1860	Cork screws.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
<b>C.</b>			
CADEROUSSE, PERRIN DE -	1911	8th Aug. 1860	An improved mode of binding up brooms, together with the machine used for that purposes. (Patented by Charles Stevens.)
CAIL, GEORGE HENRY - -	2848	21st Nov. 1860	Manufacture of manure.
CAIL, RICHARD - - -	1287	24th May 1860	Improved deodorizing agents.
CAILLOÛÉ, CHARLES JEAN [EUGENE BAPTISTE.]	1105	2nd May 1860	A self heating ironing apparatus. (Patented by Benjamin Browne.)
CAIRNS, CHRISTOPHER - -	3025	10th Dec. 1860	Making moulds for casting.
CALKIN, JOSEPH - - -	2438	8th Oct. 1860	An improved apparatus for protecting the upper portion of the face from the inclemency of the weather, dust or otherwise.
CALLANDER, JOHN ALEXANDER	2357	28th Sept. 1860	An improved method of hanging doors.
CALLARD, THOMAS KARR -	148	20th Jan. 1860	Preparing wheaten flour.
CALLEBAUT, CHARLES - -	2409	5th Oct. 1860	Sewing-machines.
CALONNIER, PEYRON ETIENNE	2433	8th Oct. 1860	An improved lathe for ribbon-looms. (Patented by John Adams Knight.)
CALVERT, FRANCIS ALTON -	2218	14th Sept. 1860	Steam-engines and boilers; valves for steam and other fluids.
CALVERT, FRANCIS ALTON -	2276	19th Sept. 1860	Machinery and apparatus for opening, burring, cleaning, and carding cotton and other fibrous materials; partly applicable to opening twisted yarns and woven fabrics.
CALVERT, FREDERICK CRACE	1426	11th June 1860	Manufacture of colouring matters.
CALVERT, FREDERICK CRACE	2075	28th Aug. 1860	Collecting and saving certain products given off or emitted during the manufacture of coke.
CALVERT, GEORGE JOHN -	743	22nd March 1860	Portable buildings and structures.
CALVERT, JOHN - - -	173	24th Jan. 1860	Improved methods of easing and distributing the strain on ships' cables when subjected to great tension or pressure.
CAMBACÈRES, JULES LÉONARD [LOUIS.]	1808	25th July 1860	Treating fatty and oily matters.
CAMPBELL, JAMES - - -	2013	21st Aug. 1860	Apparatus for removing sand or mud from the bottom of the sea, and of rivers, docks, and harbours.
CAMPBELL, JAMES - - -	2307	21st Sept. 1860	A chambered floating dry dock.
CAMPBELL, WILLIAM - -	1817	27th July 1860	Improvements in the form of steam-ships.
CAMBON, AUGUSTIN JOSEPH -	2057	27th Aug. 1860	Construction of axle boxes and axle bearings. (Patented by Marc Antoine François, Mennons.)
CAMBRIDGE, WILLIAM COL- [BORNE.]	2606	25th Oct. 1860	Construction of harrows.
CAMPION, WILLIAM } CAMPION, WILLIAM }	1569	28th June 1860	Sewing-machines.
CANIER, THEOPHILE - -	463	20th Feb. 1860	Stamping-presses. (Patented by Richard Archibald Brooman.)
CANNON, JOHN R. - - -	396	14th Feb. 1860	Manufacture of coffins. (Patented by Samuel Copping.)

[Can]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Car]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
CANNON, WILLIAM WALTER -	2029	23rd Aug. 1860	Machinery or apparatus for spinning cotton and other fibrous substances.
CANOUIL, GERMAIN - -	970	18th April 1860	Improved compositions for priming percussion caps, and a machine or apparatus employed therein.
CANTAGREL, FRANÇOIS JEAN	2183	10th Sept. 1860	Apparatus for ascertaining the existence of escapes in pipes and vessels for conveying (and holding) lighting and heating gases: —“Escape Indicator.”
CANTILLON, VICTOR - -	1296	25th May 1860	Manufacturing of glass casks and barrels.
CANU, ADOLPHE JOSEPH -	3034	11th Dec. 1860	An improved pulverizing and bruising machine.
CAPLEN, EDWIN - - -	420	16th Feb. 1860	Construction of soles and heels for boots, shoes, and other coverings for the feet.
CARVALHO, SOLOMON NUNES	1925	8th Aug. 1860	Mode of and apparatus for superheating steam. ( <i>Patented by Alfred Vincent Newton.</i> )
CARLESS, EUGENE - - -	1335	30th May 1860	Manufacture of all kinds of candles for the purpose of rendering them free from guttering.
CARMONT, WILLIAM - -	965	17th April 1860	An improvement in casting steel tyres for wheels, which is also applicable to casting other articles of steel.
CARO, HEINRICH - - -	985	19th April 1860	Dyeing cotton yarns or threads and fabrics. ( <i>Communicated by August Leonhardt.</i> )
CARO, HEINRICH - - -	1307	26th May 1860	Obtaining colouring matters for dyeing and printing.
CAROSIN, JAMES FELIX - -	2868	23rd Nov. 1860	Treating cane-trash. ( <i>Communicated by Joseph François Hugoulin.</i> )
CARPENTER, SAMUEL ALFRED	1842	28th July 1860	A new or improved adjuster for adjusting the backs of waistcoats and trousers; which said adjuster may also be used as a substitute for the fastenings ordinarily employed in fastening gloves, garters, and belts.
CARPENTER, WILLIAM A. -	1860	2nd June 1860	An improved permutation lock. ( <i>Patented by William Edward Newton.</i> )
CARPENTIER, JEAN BAPTISTE [AUGUSTE.]	953	16th April 1860	A new metrical apparatus with table.
CARR, HENRY - - -	1258	22nd May 1860	Railway axle boxes and axles.
CARR, HENRY - - -	2829	17th Nov. 1860	Axle boxes.
CARR, JOHN - - -	2404	4th Oct. 1860	Reaping-machines.
CARRÉ, FERDINAND PHILIPPE [EDOUARD.]	2503	15th Oct. 1860	An improved method of and apparatus for refrigerating and freezing. ( <i>Patented by George Davies.</i> )
CARRÈRE, JEAN - - -	1937	10th Aug. 1860	Boilers. ( <i>Patented by Charles Stevens.</i> )
CARTE, RICHARD - - -	2967	3rd Dec. 1860	Wind musical instruments.
CARTER, GEORGE - - -	86	12th Jan. 1860	Means and apparatus for boiling and mixing size, colour, or any other matters or substances requiring such treatment.
CARTER, HENRY - - -	879	7th April 1860	Machinery or apparatus for making gas burners.
CARTER, JAMES JOSHUA -	1154	10th May 1860	Extracting wool or other animal fibres from combinations of wool and cotton or mixtures of other animal and vegetable fibrous substances or fabrics; machinery or apparatus employed therein.

[Car]

## ALPHABETICAL INDEX OF PATENTEES

[Cav]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
CARTER, JOHN MONEY -	778	26th March 1860	Knapsacks and pouches for the use of soldiers and others.
CARTER, JOSEPH THRELFALL -	179	24th Jan. 1860	Improvements in machinery for tilling the soil, and in engines and boilers for driving the same and other agricultural implements.
CARTER, JOSEPH THRELFALL -	2966	3rd Dec. 1860	An improved method of roughing horse shoes.
CARTER, JOSHUA - -	1154	10th May 1860	Extracting wool or other animal fibres from combinations of wool and cotton or mixtures of other animal and vegetable fibrous substances or fabrics; machinery or apparatus employed therein.
CARTWRIGHT, HENRY -	1553	26th June 1860	Means or apparatus in connection with steam-engines to facilitate the working of the same expansively.
CARTWRIGHT, MATTHEW -	1549	26th June 1860	Manufacture of mouth pieces for dental and other purposes.
CARVALHO, ANTONIO JOAQUIM [PEREIRA DE.]	1378	5th June 1860	Improvements in beams applicable in the construction of bridges and other structures and also for the floors and ceilings of houses.
CARVER, JAMES - -	346	8th Feb. 1860	Manufacture of combs used in pusher machines for the making of lace or other articles; manufacture of counters used when casting the same.
CARY, JOSEPH HENRY -	3007	8th Dec. 1860	Hammer-rails.
CASELLI, GIOVANNI - -	1765	20th July 1860	Manufacture of apparatus for regulating the force of electric currents. (Patented by Alfred Vincent Newton.)
CASH, JOHN - - -	2292	20th Sept. 1860	Manufacture of frillings to be applied to wearing-apparel.
CASH, JOSEPH, junior -	2292	20th Sept. 1860	Manufacture of frillings to be applied to wearing-apparel.
CASSON, JOHN - - -	3057	13th Dec. 1860	An improved machine for dressing dried fruits, and separating and removing therefrom the stems and other refuse without injury to the fruit.
CASTELLY, AUGUSTIN -	265	1st Feb. 1860	Improved apparatus for retarding railway carriages. (Patented by William Edward Newton.)
CASTOR, THOMAS - -	2543	18th Oct. 1860	Construction of passenger carriages. (Patented by Alfred Vincent Newton.)
CASWELL, JOHN - - -	3019	8th Dec. 1860	Improved machinery for making bricks. (Patented by William Edward Newton.)
CATLIN, GEORGE - - -	1443	12th June 1860	Construction of ships and other floating bodies
CATLOW, CHRISTOPHER -	432	17th Feb. 1860	Power-looms for weaving.
CATLOW, CHRISTOPHER -	697	16th March 1860	Power-looms for weaving.
CATOR, GEORGE ALBEMARLE -	242	30th Jan. 1860	Machinery for preparing flax, hemp, and other vegetable fibrous substances, for scutching or other manufacturing processes.
CAULFIELD, WILLIAM BEARE	2419	6th Oct. 1860	Slinging and raising sunken or stranded vessels.
CAVANAGH, MICHAEL - -	1272	23rd May 1860	Lock spindles.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
CAZANAVE, JULES - -	2216	13th Sept. 1860	Improvements in the processes of cementation or case hardening and softening iron. (Patented by George Davies.)
CHABROL, PIERRE CELSE [HIPPOLYTE.	2880	24th Nov. 1860	Making of cages and aviaries for birds.
CHADWICK, DAVID - -	573	1st March 1860	Apparatus for measuring water and other liquids.
CHAFFEE, ——— - -	1873	3rd Aug. 1860	An improved process in the vulcanization of india-rubber and other similar substances under pressure. (Patented by John Talbot Pitman.)
CHAFFEE, ——— - -	1875	3rd Aug. 1860	An improved press. (Patented by John Talbot Pitman.)
CHALLETON, JEAN FRANÇOIS [FÉLIX.	957	16th April 1860	Improvements in breech-loading fire-arms and in projectiles, and also in apparatus for reducing ordinary guns to condition suitable for such improvements in fire-arms, which apparatus is also applicable for other purposes. (Patented by William Clark.)
CHAMBERLAIN, HUMPHREY -	3192	29th Dec. 1860	Improvements in the preparation of clay for pottery purposes, which improvements are also applicable to filtering or cleansing liquids.
CHAMBERS, AUSTIN - -	31	5th Jan. 1860	Mode of working junction signals on railways.
CHAMBERS, WILLIAM MARTIN	826	30th March 1860	Method of and apparatus for straightening angle iron and other bar iron of a trough like shape, after it leaves the rolls and while still hot.
CHANCE, HENRY - - -	54	7th Jan. 1860	Manufacture of glass.
CHANDLER, HENRY - - -	2080	29th Aug. 1860	Improved seats for theatres or other public buildings.
CHANDLER, JAMES - - -	2454	9th Oct. 1860	Glass gauges for indicating the levels of liquids contained in vessels of any kind.
CHANTRELL, GEORGE FREDERIC	3030	13th Dec. 1860	An improved draught generator. (Communicated by Isadore Alleweireldt.)
CHAPA, JOSEPH - - -	2194	11th Sept. 1860	An electric controller for indicating the relative position of trains on railways.
CHAPA, J. - - - -	3035	11th Dec. 1860	An impermeable anti-sulphuric coating for leather. (Patented by Charles Stevens.)
CHAPLIN, ALEXANDER - -	129	18th Jan. 1860	Engines for drawing or conveying heavy loads.
CHAPUIS, CHARLES ANDRÉ -	623	7th March 1860	A new or improved process in manufacturing and ornamenting ceramic products chemically.
CHARLESWORTH, HENRY -	489	23rd Feb. 1860	Cigarettes.
CHARLESWORTH, WILLIAM -	489	23rd Feb. 1860	Cigarettes.
CHARNLEY, HENRY - -	1167	11th May 1860	An improved machine for making bricks and tiles and other articles from plastic materials.
CHARRIER, ARSÈNE - -	1595	2nd July 1860	Improvements in chairs and other articles of furniture to be used principally at sea. (Patented by William Edward Gedge.)
CHARTROULE, PAUL - -	322	7th Feb. 1860	Iodine inhaling means and apparatus for medical purposes.

[Cha]

## ALPHABETICAL INDEX OF PATENTEEES

[Che

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
CHATELIER, LOUIS LE - -	2654	30th Oct. 1860	Production of alumina and salts of alumina. (Patented by William Edward Newton.)
CHATTAWAY, EDWIN DANIEL -	3053	12th Dec. 1860	Apparatus for enabling guards and engine drivers of railway trains to communicate with one another.
CHATTERTON, JOHN - -	109	14th Jan. 1860	Treating gutta-percha, india-rubber, and compounds of those substances.
CHATTERTON, JOHN - -	1178	12th May 1860	Electric telegraph conductors.
CHATTERTON, JOHN - -	2056	25th Aug. 1860	Manufacture of telegraphic cables.
CHATTERTON, JOHN - -	3138	21st Dec. 1860	Manufacture of electric telegraph cables.
CHATWIN, GEORGE HENRY -	1450	13th June 1860	Ribs of parasols and other like articles.
CHATWOOD, SAMUEL - -	275	2nd Feb. 1860	Sewing or stitching machines.
CHATWOOD, SAMUEL - -	1308	28th May 1860	Improvements in iron safes and in locks for the same, which locks are also applicable to other purposes.
CHAUMONNOT-DELAROTHIÈRE, [JULES.	2679	2nd Nov. 1860	Stocking-frames.
CHAUVEAU, CHARLES DE -	23	4th Jan. 1860	An improved fertilizing compound for agricultural purposes. (Patented by Marc Antoine François Mennons.)
CHAVET, ALEXANDRE FRANÇOIS	2727	6th Nov. 1860	Manufacture of forks and spoons. (Patented by Richard Archibald Brooman.)
CHEETHAM, SAMUEL - -	966	17th April 1860	" Cop tubes."
CHEETHAM, WILLIAM THOMAS	681	14th March 1860	Cocks or taps.
CHEEVER, JOHN H. - -	325	7th Feb. 1860	Rendering waste "vulcanized," "hermized," and "changed" or "converted" india-rubber and india-rubber compounds useful and capable of being re-worked for the manufacture of a great variety of articles of trade and commerce. (Patented by William Edward Newton.)
CHEEVER, JOHN HAVEN - -	1957	13th Aug. 1860	An improved mode of treating waste vulcanized india-rubber. (Patented by Alfred Vincent Newton.)
CHEEVER, JOHN HAVEN - -	1959	13th Aug. 1860	Mode of and machinery for manufacturing hose pipe. (Patented by Alfred Vincent Newton.)
CHEEVER, JOHN HAVEN - -	1960	13th Aug. 1860	Mode of and apparatus for manufacturing packing for pistons and other parts of machinery. (Patented by Alfred Vincent Newton.)
CHEEVER, JOHN HAVEN - -	1961	13th Aug. 1860	Manufacture of driving bands; machinery to be employed in such manufacture. (Patented by Alfred Vincent Newton.)
CHEEVER, SIMON G. - -	2260	17th Sept. 1860	Lanterns. (Patented by William Edward Newton.)
CHEEVER, SIMON G. - -	2269	18th Sept. 1860	Gas-meters. (Patented by William Edward Newton.)
CHELL, GEORGE - - -	1437	12th June 1860	Machinery for twisting, doubling and winding yarn and thread.
CHÉRADAME, ANTOINE LÉO- [POLD.	2659	31st Oct. 1860	A life-preserver.
CHÉRY, FRANÇOIS JULES -	3177	28th Dec. 1860	Improvements in furnaces for consuming smoke. (Patented by George Henry Birkbeck.)



[Che]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Cal]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
CHESTER, CHARLES - -	345	8th Feb. 1860	Cooling liquids.
CHESTERMAN, JAMES - -	2761	9th Nov. 1860	Improvements in tents, marquees and other like articles, parts of which are applicable to umbrellas and parasols, also in machinery for manufacturing parts thereof.
CHESTERMAN, JAMES - -	3112	18th Dec. 1860	Improvements in door and gate springs, hinges, and centres, the improved springs being applicable to other purposes for which springs are employed.
CHESTERTON, JOSEPH - -	2212	13th Sept. 1860	A new or improved method of constructing portable buildings.
CHETWYN, EPHRAIM - -	12	3rd Jan. 1860	Manufacture of gloves.
CHETWYN, EPHRAIM - -	1592	2nd July 1860	Manufacture of gloves.
CHEVALIER, CHARLES - -	526	25th Feb. 1860	Targets.
CHEVALIER, PIERRE ERNEST -	1273	23rd May 1860	An improved table stand for the support of glasses and other articles.
CHILDS, AUGUSTUS BRYANT -	1482	19th June 1860	Manufacture of a portable pocket match safe. ( <i>Communicated by Albert M. Smith.</i> )
CHISHOLM, GEORGE - -	2597	24th Oct. 1860	An improved method of obtaining compounds of nitrogen.
CHISHOLM, JOHN - - -	2597	24th Oct. 1860	An improved method of obtaining compounds of nitrogen.
CHOLLET, MAXIMILIAN LOUIS [JOSEPH.]	1707	14th July 1860	A solid alimentary compound for making soups, seasoning meats, made dishes, and vegetables.
CHOWEN, GEORGE - -	2838	19th Nov. 1860	Obtaining motive-power by hydraulic means.
CHRIMES, PETER - - -	1204	16th May 1860	Stoppering bottles, jars, and other like vessels.
CHRISTOPHE, ADOLPHE - -	579	1st March 1860	Gas regulators or governors. ( <i>Patented by John Henry Johnson.</i> )
CHUBB, JOHN - - -	3071	13th Dec. 1860	Locks.
CHURCH, JABEZ - - -	784	26th March 1860	Manufacture of coke.
CHURCH, JOHN - - -	2739	7th Nov. 1860	A brick and tile machine.
CLAEYS, THEODOOR AUGUSTIN	1033	25th April 1860	Improved machinery for the manufacture of corks, bungs, and shives.
CLAPHAM, JOHN HENRY -	835	31st March 1860	An improvement in spinning applicable to various kinds of yarns.
CLAPHAM, ROBERT CALVERT -	1287	24th May 1860	Improved deodorizing agents.
CLAPHAM, ROBERT CALVERT -	2193	11th Sept. 1860	Manufacture of bleaching powder; apparatus employed therein.
CLAPHAM, WILLIAM - -	835	31st March 1860	An improvement in spinning applicable to various kinds of yarns.
CLAPHAM, WILLIAM - -	3194	31st Dec. 1860	Trombones.
CLARIDGE, THOMAS - -	1619	4th July 1860	An improved arrangement of combined thrashing and dressing machine.
CLARK, ARCHIBALD - -	2686	2nd Nov. 1860	Packages or holders for containing biscuits.
CLARK, ARTHUR TURNER -	1512	21st June 1860	Signal lanterns.
CLARK, CHARLES FREDERICK	2615	26th Oct. 1860	Enamelling or coating with glass certain kinds of metallic articles.
CLARK, DANIEL KINNEAR -	830	31st March 1860	Steam-engines and boilers.
CLARK, JOHN - - -	1045	26th April 1860	Power-loom for weaving checks.
CLARK, JOHN - - -	2366	1st Oct. 1860	Improved apparatus for spinning or twisting.
CLARK, JOHN - - -	2735	7th Nov. 1860	Outside shop-lights.

[Cla]

## ALPHABETICAL INDEX OF PATENTEES

[Cla]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
CLARK, MALCOLM - - -	2686	2nd Nov. 1860	Packages or holders for containing biscuits.
CLARK, WILLIAM - - -	394	13th Feb. 1860	Apparatus used for stretching, drying, and finishing woven fabrics. (Communicated by <i>Alphonse Decharpe</i> .)
CLARK, WILLIAM - - -	426	16th Feb. 1860	Manufacture of gas; apparatus for the same. (Communicated by <i>Mr. Etienne Charles Zacherie Bouchard</i> .)
CLARK, WILLIAM - - -	427	16th Feb. 1860	Sword and other sheaths and scabbards. (Communicated by <i>Mr. Jean Baptiste Adolphe Jay</i> .)
CLARK, WILLIAM - - -	569	1st March 1860	Machinery for "sizing" raw silk or other threads and for cleaning the same preparatory to the sizing operation. (Communicated by <i>Messieurs John Edwin Atwood and Lewis Leigh</i> .)
CLARK, WILLIAM - - -	711	17th March 1860	Application of paper to filtering fluids. (Communicated by <i>Messieurs Gustave Devillepoix and Joseph François Bonnatere</i> .)
CLARK, WILLIAM - - -	717	19th March 1860	Tanning hides. (Communicated by <i>Mr. Wilhelm Martz</i> .)
CLARK, WILLIAM - - -	880	7th April 1860	Fire-arms. (Communicated by <i>the Star Arms Company</i> .)
CLARK, WILLIAM - - -	881	7th April 1860	Axles or journals in combination with lubricating axle boxes for railway and other carriages. (Communicated by <i>James Hervey Deming</i> .)
CLARK, WILLIAM - - -	882	7th April 1860	Improved apparatus for treating peat or turf. (Communicated by <i>Auguste Marcellin Count de Lara et du Ren</i> .)
CLARK, WILLIAM - - -	957	16th April 1860	Improvements in breech loading fire-arms and in projectiles, as also in apparatus for reducing ordinary guns to condition suitable for such improvements in fire-arms, which apparatus is also applicable for other purposes. (Communicated by <i>Messrs. Hugo Frédéric Forbes and Jean François Felix Challeton</i> .)
CLARK, WILLIAM - - -	998	21st April 1860	Enclosing or covering opium and other matters. (Communicated by <i>Pierre Hector Aubergier</i> .)
CLARK, WILLIAM - - -	1027	24th April 1860	Manufacture of ammonia. (Communicated by <i>Messrs. Louis Joseph Frédéric Margueritte and Alfred Lalouët de Sourdeval</i> .)
CLARK, WILLIAM - - -	1055	26th April 1860	Boring-bits. (Communicated by <i>Messrs. Gabriel Coulovrat and Auguste Genon</i> .)
CLARK, WILLIAM - - -	1171	11th May 1860	Manufacture of cyanides of barium and strontium. (Communicated by <i>Messrs. Louis Joseph Frédéric Margueritte and Alfred Lalouët de Sourdeval</i> .)
CLARK, WILLIAM - - -	1403	7th June 1860	Electric telegraph apparatus. (Communicated by <i>Pier Alberto Balestrini</i> .)

[Cla]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Cla]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
CLARK, WILLIAM - - -	1404	7th June 1860	Preservation of animal and vegetable matters. (Communicated by Jules René Léon.)
CLARK, WILLIAM - - -	1473	16th June 1860	Storing and preserving grain; apparatus connected therewith. (Communicated by Charles Joseph Emile Pavy.)
CLARK, WILLIAM - - -	1510	21st June 1860	Machinery or apparatus for the manufacture of envelopes. (Communicated by Laurent Poirier.)
CLARK, WILLIAM - - -	1571	28th June 1860	Machinery for cutting files. (Communicated by James Cooper Cooke.)
CLARK, WILLIAM - - -	1688	11th July 1860	Steam-engines. (Communicated by Mr. Charles Claude Etienne Minié.)
CLARK, WILLIAM - - -	1755	19th July 1860	Valve apparatus for regulating the flow of steam and other fluids. (Communicated by Messieurs Charles Auguste Riff and Antoine Laudemüller.)
CLARK, WILLIAM - - -	1756	19th July 1860	Stamping or embossing presses. (Communicated by Mr. Laurent Poirier.)
CLARK, WILLIAM - - -	1783	24th July 1860	Apparatus for setting and sharpening scythes and other like instruments. (Communicated by Mr. Pierre Charles Ratel.)
CLARK, WILLIAM - - -	1885	3rd Aug. 1860	Embroidering machines. (Communicated by Mr. Alphonse Maureau.)
CLARK, WILLIAM - - -	1908	7th Aug. 1860	Pattens or clogs and coverings for the feet. (Communicated by Madame Marie Celina Gobert née Lebrun.)
CLARK, WILLIAM - - -	2023	22nd Aug. 1860	Preparation or manufacture of manure. (Communicated by Messieurs Louis Joseph Frédéric Margueritte, and Alfred Lalouët de Sourdenal.)
CLARK, WILLIAM - - -	2044	24th Aug. 1860	Apparatus used in reproducing designs in tapestry or wool work. (Communicated by Mr. Charles Louis Roguier.)
CLARK, WILLIAM - - -	2059	27th Aug. 1860	Fire-arms. (Communicated by Mr. Charles Claude Etienne Minié.)
CLARK, WILLIAM - - -	2439	8th Oct. 1860	Cleaning or separating gutta-percha from extraneous matters; apparatus for the same. (Communicated by Messrs. Louis Boulet, Auguste Sarazin, and Louis Hamy.)
CLARK, WILLIAM - - -	2440	8th Oct. 1860	Driving straps and belts. (Communicated by Messrs. Louis Boulet, Auguste Sarazin, and Louis Hamy.)
CLARK, WILLIAM - - -	2484	10th Oct. 1860	Improved signalling and indicating apparatus. (Communicated by Mr. Jean Barissa.)
CLARK, WILLIAM - - -	2495	13th Oct. 1860	Lubricating apparatus. (Communicated by Mr. Napoléon Jourdan.)
CLARK, WILLIAM - - -	2567	20th Oct. 1860	Manufacture of articles of jewellery; apparatus for the same. (Communicated by Messrs. Jean Louis Antoine Marie Bouret, and Charles Theophile Ferré.)

[Cla]

## ALPHABETICAL INDEX OF PATENTEES

[Cla]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
CLARK, WILLIAM - - -	2633	27th Oct. 1860	Improvements in corsets and their fastenings, which are also applicable to other articles of dress. (Communicated by Alphonse Cousin and Adèle Duval.)
CLARK, WILLIAM - - -	2648	29th Oct. 1860	Railway break apparatus. (Communicated by Mr. Antoine Grivel, junior.)
CLARK, WILLIAM - - -	2682	2nd Nov. 1860	Steam generators. (Communicated by Mr. Pierre François Joly.)
CLARK, WILLIAM - - -	2786	13th Nov. 1860	Looms. (Communicated by Mr. Benoit Barlet.)
CLARK, WILLIAM - - -	2850	21st Nov. 1860	Improvements in journal or axle boxes for railway carriages, whereby to effect the better lubrication of the frictional surfaces. (Communicated by Mr. James Hervey Deming.)
CLARK, WILLIAM - - -	2955	1st Dec. 1860	Looms. (Communicated by Mr. Joseph Matter.)
CLARK, WILLIAM - - -	3002	7th Dec. 1860	Machinery for planing or cutting wood; apparatus connected therewith. (Communicated by Mr. Jules Mareschal.)
CLARK, WILLIAM - - -	3024	10th Dec. 1860	Photographic apparatus. (Communicated by Mr. Charles Gustave Anthoni.)
CLARK, WILLIAM - - -	3084	13th Dec. 1860	Manufacture of gas. (Communicated by Mr. Heber Marini.)
CLARK, WILLIAM - - -	3077	14th Dec. 1860	Signalling from one part of a railway train to another. (Communicated by Mr. André Louis Hyacinthe de Goy.)
CLARK, WILLIAM - - -	3150	22nd Dec. 1860	Manufacture of colouring matters. (Communicated by Charles Emile Kopp.)
CLARK, WILLIAM - - -	3186	29th Dec. 1860	An improved tissue fabric or structure. (Communicated by Mr. Michel Antoine Graziani.)
CLARK, WILLIAM HENRY -	2579	23rd Oct. 1860	An improved lubricating composition to be used with other lubricators.
CLARKE, HENRY MARTYN -	792	27th March 1860	A new and useful or improved machine for the making and sizing of pulp used in the manufacture of paper. (Communicated by Thomas Eustice and Joseph Jordan, junior.)
CLARKE, HENRY MARTYN -	2019	22nd Aug. 1860	An improved machine for grinding or reducing paper stuff to pulp, and sizing the same. (Communicated by Joseph Jordan, junior.)
CLARKE, JAMES, junior -	3127	20th Dec. 1860	Warping.
CLARKE, JOHN - - -	1435	12th June 1860	An improved registering apparatus applicable to gauges for steam, water, vacuum, heat, and similar purposes, and also an improved mode of weighting or balancing the ordinary index finger of gauges.
CLARKE, WILLIAM - - -	2528	17th Oct. 1860	Manufacture of fabrics in twist lace machinery.



[Cl.]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Cof]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
CLAUSEN, CLAUS H. - -	1361	2nd June 1860	Improved machinery for kneading or preparing clay for the manufacture of bricks or other articles made from plastic materials. (Patented by William Edward Newton.)
CLAY, CHARLES - - -	1348	31st May 1860	Implements for scarifying and grubbing or cutting up weeds and otherwise cultivating land.
CLAY, JOHN, junior - -	194	25th Jan. 1860	A high pressure stop valve or cock.
CLAY, WILLIAM - - -	643	9th March 1860	Manufacture of gun barrels, cannon, and other ordnance.
CLAYTON, NATHANIEL - -	1227	17th May 1860	Portable and traction engines.
CLAYTON, ROBERT - - -	186	25th Jan. 1860	Rolling and haping iron and steel for manufacturing railway wheels.
CLAYTON, THOMAS - - -	398	14th Feb. 1860	Pressing, ornamenting, and finishing woollen and other fabrics; machinery or apparatus employed therein.
CLEGG, WILLIAM - - -	2416	6th Oct. 1860	Certain machines for preparing cotton and other fibrous materials.
CLEMENTS, CHARLES - -	1028	24th April 1860	Driving gear of pumps. (Patented by John William Ford.)
CLEMO, EBENEZER - - -	2197	11th Sept. 1860	An improved mode of manufacturing stock for paper from straw and other vegetable substances.
CLIFT, SAMUEL - - -	1426	11th June 1860	Manufacture of colouring matters.
CLIFTON, JOSEPH - - -	1579	29th June 1860	Looms. (Patented by George Cheesman Morgan.)
CLIFTON, JOSEPH - - -	1580	29th June 1860	Manufacture of driving belts and straps. (Patented by George Cheesman Morgan.)
CLISSOLD, WILLIAM - - -	143	20th Jan. 1860	Improved machinery for grinding vegetable, mineral, and other substances.
CLISSOLD, WILLIAM - - -	1266	22nd May 1860	Manufacture of driving belts.
CLISSOLD, WILLIAM - - -	1267	22nd May 1860	Construction of gearing wheels.
CLISSOLD, WILLIAM - - -	3196	31st Dec. 1860	An improved construction of clutch for driving gear.
COATES, CHARLES - - -	1465	16th June 1860	Construction of breaks for carriages.
COBLEY, THOMAS - - -	2612	26th Oct. 1860	Manufacture of white lead (meaning carbonates of lead.)
COBLEY, THOMAS - - -	2731	6th Nov. 1860	Method of treating poor ores of copper.
COCHRAN, JOHN WEBSTER -	2726	6th Nov. 1860	Projectiles. (Patented by Elias Howe, junior.)
COCKER, JAMES - - -	344	8th Feb. 1860	Improved apparatus for indicating the number of passengers carried by public vehicles.
COCKER, JAMES - - -	2294	20th Sept. 1860	An improved construction of packing case.
COCKEY, FRANCIS CHRISTOPHER	1929	9th Aug. 1860	Driving chaff and root cutters, and other agricultural machines.
COCKEY, HENRY - - -	1929	9th Aug. 1860	Driving chaff and root cutters, and other agricultural machines.
COFFEY, JOHN AMBROSE -	60	9th Jan. 1860	Obtaining and applying motive-power by means of ponderous bodies.
COFFEY, JOHN AMBROSE -	105	14th Jan. 1860	Improvements applicable to or connected with steam-engines and other motive mechanism with the view to economize power.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
COHADE, HENRY FRANÇOIS -	878	5th April 1860	Mode of and apparatus for obtaining motive-power. (Patented by Michael Henry.)
COHADE, HENRY FRANÇOIS -	1585	30th June 1860	Obtaining motive-power.
COIGNARD, LOUIS - - -	1114	3rd May 1860	Mode of and apparatus for propelling, turning and changing the direction of ships, balloons and other bodies. (Patented by Michael Henry.)
COIGNARD, LOUIS - - -	1540	25th June 1860	Improvements in hydraulic apparatus for obtaining motive-power and for raising water. (Patented by John Henry Johnson.)
COIGNET & Co. - - -	3119	19th Dec. 1860	Manufacture of colours applicable for various uses in arts and manufactures. (Patented by Michael Henry.)
COLE, JAMES - - -	1220	17th May 1860	Looms for weaving.
COLE, JOHN JENKINS - -	722	20th March 1860	Chimneys.
COLE, MARY SCARVELL - -	3116	19th Dec. 1860	Ornamenting or illuminating glass for decorative purposes.
COLE, RICHARD JOHN - -	255	31st Jan. 1860	Improvements in pencils and in holders for the same.
COLE, RICHARD JOHN - -	361	11th Feb. 1860	Manufacture of lead and other materials for pencils.
COLE, RICHARD JOHN - -	390	13th Feb. 1860	Construction of brushes.
COLE, RICHARD JOHN - -	2026	23rd Aug. 1860	Construction of brushes.
COLE, RICHARD JOHN - -	2273	18th Sept. 1860	Ornamenting the external walls of houses and buildings.
COLE, RICHARD JOHN - -	2277	19th Sept. 1860	Manufacture of brushes.
COLE, RICHARD JOHN - -	2395	3rd Oct. 1860	Ornamenting the windows of public and private vehicles.
COLE, RICHARD, JOHN - -	3116	19th Dec. 1860	Ornamenting or illuminating glass for decorative purposes.
COLE, THOMAS - - -	2936	29th Nov. 1860	Looms for weaving ribbons and other fabrics.
COLEMAN, JOHN, junior - -	2481	11th Oct. 1860	Improved apparatus for raising and stacking straw and other agricultural produce.
COLEMAN, JOSEPH JAMES - -	1988	16th Aug. 1860	Manufacture of colouring matters for dyeing and printing.
COLES, COWPER PHIPPS - -	1462	15th June 1860	Iron-cased ships of war.
COLHOUN, GEORGE - - -	402	14th Feb. 1860	Improved apparatus for producing an artificial draft in chimneys and for purposes of ventilation. (Patented by William Edward Newton.)
COLLIER, EDWARD - - -	2329	25th Sept. 1860	Respirators.
COLLIER, GEORGE - - -	1294	25th May 1860	Manufacture of fabric of the character of that technically called "Camlet."
COLLINS, JAMES - - -	575	1st March 1860	Improved outside blinds and awnings.
COLLYER, ROBERT HANHAM -	564	29th Feb. 1860	Improvements in the manufacture of pulp and in preparing materials for the purpose and in apparatuses employed therein, part of the invention being also applicable to preparing materials for fibrous and textile manufacturing purposes.

Col]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Coo

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
COLLYER, ROBERT HANHAM -	804	28th March 1860	Improvements in manufacturing pulp for paper, papier-mâché and other similar uses and in apparatus employed therein, part of the invention being also applicable to other operations in which materials have to be subjected to the action of liquids, steam and other fluids.
COLLYER, ROBERT HANHAM -	1275	23rd May 1860	Manufacture of tubes and other vessels and other articles; machinery and apparatus connected therewith.
COLLYER, ROBERT HANHAM -	1329	29th May 1860	Improvements in telegraph cables; also applicable to other similar purposes.
COLTMAN, THOMAS - -	1312	28th May 1860	Manufacture of reels for reeling cotton and other thread.
COLVIN, L. O. - - -	2634	27th Oct. 1860	Improved apparatus for milking cows. (Patented by William Edward Newton.)
COLWELL, CHARLES - -	3082	15th Dec. 1860	An invention for preventing explosions in coal mines and other places thereby to save life and property, with other improvements.
COMBE, JAMES - - -	1425	9th June 1860	Roving and slubbing frames; means of transmitting power thereto and to machinery generally.
COMFORT, SAMUEL - - -	374	11th Feb. 1860	Sewing-machines. (Patented by John Henry Johnson.)
CONANT, HEZEKIAH - -	1224	17th May 1860	A new and useful improvement in mechanism for regulating the delivery or letting off of warp in looms for knitting or weaving.
CONCHE, ANTOINE - - -	1678	12th July 1860	Shrouds or winding sheets. (Patented by Edward Thomas Hughes.)
COOK, EDWARD - - -	3146	22nd Dec. 1860	Sacking and joints for bedsteads.
COOK, EDWIN FREDERICK -	654	10th March 1860	Connecting brooms and brushes to their sticks or handles.
COOK, HENRY - - -	2605	25th Oct. 1860	Manufacture of crinoline.
COOK, JOHN - - -	971	18th April 1860	Looms.
COOKE, JAMES - - -	2221	14th Sept. 1860	Singeing, treating or finishing textile fabrics, yarns, felts and other similar materials.
COOKE, JAMES COOPER -	1571	28th June 1860	Machinery for cutting files. (Patented by William Clark.)
COOKE, WILLIAM - - -	2733	7th Nov. 1860	Ventilating.
COOKE, WILLIAM - - -	2853	21st Nov. 1860	Ventilating.
COOKSON, GEORGE JOHN -	1407	7th June 1860	Gas regulators. (Communicated by James Gabriel Paryer.)
COOLEY, ROBERT BARLOW -	535	27th Feb. 1860	Manufacture of plain or ornamental woven or looped fabrics from certain descriptions of yarn, and for the application of such fabrics to the making of various articles of dress and for other uses, such as hats, caps, gloves, hosiery, lace, shawls, mantle and other cloths, curtains, table, umbrella and other covers, such fabrics being made with or without terry, plush or cut pile surfaces.
COOMBS, HENRY M. - -	1884	3rd Aug. 1860	Washing-machines. (Patented by William Edward Newton.)
COOPER, BENJAMIN - -	759	23rd March 1860	Sizing and drying yarns preparatory to weaving.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
COOPER, BENJAMIN - -	812	29th March 1860	Warping and beaming yarns preparatory to weaving.
COOPER, JOHN - - -	2141	5th Sept. 1860	Railways, railway carriages and apparatus connected therewith.
COOPER, JOSEPH ROCK - -	328	7th Feb. 1860	Breech loading fire-arms and ordnance.
COOPER, JOSEPH ROCK - -	3087	13th Dec. 1860	Breech loading fire-arms.
COOPMAN, GILBERT LUCIEN [PIERRE.]	2198	11th Sept. 1860	New means and processes of tanning hides and skins by which a graduated impermeability of leathers is obtained.
COPCUTT, JAMES - - -	1242	21st May 1860	Manufacturing gas and carbon or lamp black in one or the same apparatus, and in the apparatus employed therein, and for means and apparatus for rendering the gas applicable for lighting of ships, light-houses, mines, and all other places where gas can be used.
COPE, DAVID - - - -	2429	8th Oct. 1860	Drums, kegs, casks and like packages; machinery or apparatus employed in the manufacture of the same.
COPE, EDWARD - - - -	707	17th March 1860	Manufacture of fabrics in lace machinery; means or apparatus employed therein.
COPE, EDWARD - - - -	2855	21st Nov. 1860	Lace machinery.
COPE, THOMAS - - - -	1270	23rd May 1860	Treatment and preparation of tobacco.
COPE, WILLIAM - - - -	707	17th March 1860	Manufacture of fabrics in lace machinery; means or apparatus employed therein.
COPE, WILLIAM - - - -	2855	21st Nov. 1860	Lace machinery.
COPE, WILLIAM SHERRATT -	113	16th Jan. 1860	Apparatus for preventing accidents at mines.
COPELAND, JAMES - - -	625	7th March 1860	Steam and other hammers and anvils.
COPPING, SAMUEL - - -	396	14th Feb. 1860	Manufacture of coffins. <i>Communicated by John R. Cannon.)</i>
COQUE, ADOLPHE JOSEPH -	2727	6th Nov. 1860	Manufacture of forks and spoons. <i>(Patented by Richard Archibald Brooman.)</i>
CORBETT, JOHN - - - -	1135	8th May 1860	Evaporating pans for the manufacture of salt.
CORBETT, JOSEPH - - - -	2024	23rd Aug. 1860	An improved portable circular crane applicable also as a fire-escape.
CORBETT, WILLIAM - - -	965	17th April 1860	An improvement in casting steel tyres for wheels, which is also applicable to casting other articles of steel.
CORBIN, DESBOISSIÈRES NICHOLAS FRANÇOIS.]	9	3rd Jan. 1860	Improvements in furnaces and fireplaces for the better combustion of fuel. <i>(Patented by John Henry Johnson.)</i>
CORDON, JAMES - - - -	234	30th Jan. 1860	An improved method of purifying fluids or substances by electro-magnetism.
CORDUAN, JOSEPH - - -	1385	6th June 1860	Coating or plating the faces of printing type and stereotype plates. <i>(Patented by Edward Thomas Hughes.)</i>
CORNELL, BIRDSALL - - -	458	20th Feb. 1860	A new and useful improvement in the smelting and refining of iron. <i>(Patented by William Edward Newton.)</i>
CORNELL, JOHN BLACK - -	458	20th Feb. 1860	A new and useful improvement in the smelting and refining of iron. <i>(Patented by William Edward Newton.)</i>
CORNELL, WILLIAM WIGGINS	458	20th Feb. 1860	A new and useful improvement in the smelting and refining of iron. <i>(Patented by William Edward Newton.)</i>
CORNISH, SAMUEL TOM - -	1705	14th July 1860	Ships' closets.



[Cor]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Cox]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
CORNISH, SAMUEL TOM -	3052	12th Dec. 1860	Construction of ships for the purpose of rendering them shot and shell proof.
CORROYER, ADOLPHE -	1501	20th June 1860	A new or improved washing-machine with the machinery or apparatus employed therein.
CORRY, JAMES BARRETT -	774	24th March 1860	Manufacture of gloves.
COTTAM, GEORGE HALLEN -	147	20th Jan. 1860	Manufacture of chairs, bedsteads, and other articles to sit or recline on.
COTTAM, GEORGE HALLEN -	2796	14th Nov. 1860	Hay racks.
COTTAM, HENRY RICHARD -	147	20th Jan. 1860	Manufacture of chairs, bedsteads, and other articles to sit or recline on.
COTTERELL, HENRY -	1949	11th Aug. 1860	Manufacture of umbrellas and parasols.
COTTON, WILLIAM -	70	11th Jan. 1860	Machinery or apparatus employed in the manufacture of looped fabrics.
COUILLARD, ——— -	1289	24th May 1860	Improved machinery or apparatus for mixing and moulding materials for the manufacture of fuel, part of which machinery or apparatus is applicable to moulding bricks and other analogous articles. (Patented by William Edward Newton.)
COULOUVRAT, GABRIEL -	1055	26th April 1860	Boring-bits. (Patented by William Clark.)
COULSON, JOHN -	602	5th March 1860	Improvements in thrashing-machines, part of which is applicable to cranks.
COULTER, HENRY -	2040	24th Aug. 1860	Construction of certain parts of oil lamps and other lamps. (Patented by Frederick Lambe.)
COUPE, JOHN -	2872	23rd Nov. 1860	Power looms for weaving.
COURTOT, HIPPOLYTE -	1971	15th Aug. 1860	An improved machine with a drawer and moveable knife used to part and break sugar.
COUSIN, ALPHONSE -	2633	27th Oct. 1860	Improvements in corsets and their fastenings, which are also applicable to other articles of dress. (Patented by William Clark.)
COUTANCEAU, CIZI PAUL -	1582	30th June 1860	Improved bricks and tiles. (Patented by William Edward Gedge.)
COWDERY, GEORGE -	425	16th Feb. 1860	An improved brick-making machine.
COWPER, CHARLES -	1206	16th May 1860	Manufacture and application to fibres and fabrics of a new blue colour and compounds of the same with other colours. (Communicated by Cyprien Marie Tessié du Motay.)
COWPER, CHARLES -	2165	7th Sept. 1860	Manufacture of cast steel and the remanufacture of old steel. (Communicated by Louis Jules Duhesme, Henri Catherine Camille de Ruolz, and Anselme Louis Marie de Fontenay.)
COWPER, CHARLES -	2401	4th Oct. 1860	Manufacture or extraction and application of colouring matters from the products of the distillation of coal tar. (Communicated by Joseph Marie Albert Battalier.)
COX, FRANCIS BLAKEMORE -	1332	30th May 1860	Measuring rules.
COX, KENYON -	2308	21st Sept. 1860	Rotary engines and rotary pumps. (Patented by William Edward Newton.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
COX, RICHARD - -	947	16th April 1860	Certain improvements in machinery for the manufacture of spikes, nails, pins, and rivets, and which said improvements are also applicable for partially forming or making chain links, holdfasts, staples, spouting-hooks, and other such like articles formed of iron or other metal by forging, pressing, rolling, or drawing.
COX, STEPHEN FITCHEW - -	3056	12th Dec. 1860	Apparatus employed in the manufacture of leather.
COX, THEODORE - -	2308	21st Sept. 1860	Rotary engines and rotary pumps. (Patented by William Edward Newton.)
COX, THOMAS, junior - -	608	6th March 1860	Manufacture of the stretchers of umbrellas and parasols.
COX, THOMAS, junior - -	1584	30th June 1860	Manufacture of runner notches and top notches for umbrellas and parasols.
COXON, ROBERT - -	1902	7th Aug. 1860	Hoops or apparatus for giving shape or distention to female attire.
CRAIG, JAMES - -	1247	21st May 1860	Cropping and clipping machines for the treatment of woven fabrics.
CRANDALL, HORACE IRVING -	1100	1st May 1860	Improved apparatus for lifting vessels out of water. (Patented by Alfred Vincent Newton.)
CRANE, HENRY - -	713	17th March 1860	Apparatus for controlling refractory horses. (Patented by John Henry Johnson.)
CRANE, PATRICK MOIR -	233	30th Jan. 1860	Improvements in manufactures from peat.
CRANSTON, WILLIAM McINTYRE	1394	6th June 1860	Reaping-machines. (Communicated by Walter Abbott and William Anson Wood.)
CRAUFURD, MATTHEW -	791	27th March 1860	Blocks or bricks for building purposes.
CRAWFORD, JOHN - -	1938	10th Aug. 1860	Machinery or apparatus for spinning cotton and other fibrous substances.
CRAWFORD, ROBERT - -	2263	17th Sept. 1860	Machinery or apparatus for weaving figured or plain fabrics.
CRAWFORD, ROBERT - -	2278	19th Sept. 1860	Apparatus for conveying communications from one place to another.
CRAWSHAY, GEORGE - -	742	22nd March 1860	Manufacture of iron pulleys for winding from coal pits and other purposes.
CREASER, HENRY - -	1541	25th June 1860	Reaping and mowing machines.
CRESSWELL, RANDAL - -	1422	9th June 1860	Improved apparatus for separately collecting the divers metals of which mineral ores and their gangues are composed. (Patented by William Edward Gedge.)
CRESSWELL, THOMAS - -	862	4th April 1860	Construction of steam, water, and other fluid gauges.
CRESSWELL, THOMAS - -	1180	12th May 1860	Steam generators; means of or apparatus for superheating steam and heating the feed water.
CRESSWELL, THOMAS - -	1350	1st June 1860	Improvements in or applicable to fabrics composed of wool, cotton, silk, or other fibrous substances, or combinations of these or other fibrous substances.
CRÉTAL, JEAN BAPTISTE -	1916	8th Aug. 1860	A new smoking pipe.
CRISPIN, WILLIAM HENRY -	473	22nd Feb. 1860	Fastenings for doors.
CRISPIN, WILLIAM HENRY -	2001	18th Aug. 1860	An improved propeller.
CROASDALE, BENJAMIN -	1919	8th Aug. 1860	Looms for weaving.
CROCKFORD, CHARLES -	2647	29th Oct. 1860	Manufacture of spelter from the sulphuret of zinc.

[Cro]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Cul]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
CROLL, ALEXANDER ANGUS -	1412	8th June 1860	Purification of gas.
CROMPTON, SAMUEL -	1244	21st May 1860	A new method of economizing water passing through canals when such water is used for dragging boats or otherwise.
CROOKE, JOHN -	2800	15th Nov. 1860	Method or means of packing bales of goods or merchandise by means of the hydraulic press.
CROPPER, JAMES CLOUGH -	934	14th April 1860	Sewing-machines ; apparatus connected therewith. (Patented by John Notman.)
CROSBY, ADDISON -	1196	15th May 1860	Improvements in valves and valve gear for the induction and eduction of steam to and from the cylinders of steam-engines, part of which is applicable to other purposes. (Patented by William Edward Newton.)
CROSLAND, JAMES STEAD -	2792	14th Nov. 1860	Steam-engines.
CROSS, PETER RICHARDS -	2173	8th Sept. 1860	Means or apparatus to give protection to the mouth and nostrils in respiration and to the throat and chest against the injurious effects of atmospheric influences.
CROSS, WILLIAM -	1045	26th April 1860	Power looms for weaving checks.
CROSSAN, JOSEPH M <sup>c</sup> -	2340	26th Sept. 1860	Sewing-machines. (Communicated by George Juengst.)
CROSSKILL, ALFRED -	625	30th March 1860	Reaping and mowing machines.
CROSSKILL, JAMES GAWAN -	625	30th March 1860	Reaping and mowing machines.
CROSSLEY, CHARLES -	1237	19th May 1860	Looms for weaving carpets and other looped and pile fabrics. (Patented by William Edward Newton.)
CROSSLEY, JAMES WILLIAM -	732	21st March 1860	Improvements in apparatus for heating water, air, or other fluids, generating and superheating steam, preventing incrustation in steam-boilers, and consuming smoke.
CROSSLEY, JAMES WILLIAM -	927	13th April 1860	Improvements in the construction of singe plates, which improvements are also applicable to gas and other retorts.
CROSSLEY, JOHN -	927	13th April 1860	Improvements in the construction of singe plates, which improvements are also applicable to gas and other retorts.
CROSSLEY, JOHN -	2852	21st Nov. 1860	Means or apparatus for moulding iron or other metals.
CROSSLEY, THOMAS -	1238	19th May 1860	Printing-blocks for printing fibrous and textile fabrics. (Patented by William Edward Newton.)
CRUM, ROBERT GARMANY M <sup>c</sup> -	2534	17th Oct. 1860	Machinery or apparatus for preparing "cards" for jacquard machines.
CRUMMEY, GEORGE WASHINGTON.]	1353	1st June 1860	A new and improved regulator for gas burners. (Patented by William Edward Newton.)
CULLIS, WILLIAM -	2268	18th Sept. 1860	Stoppering or closing bottles, jars and other like vessels.
CULLOCH, GILBERT M <sup>c</sup> -	1296	25th May 1860	Machinery or apparatus for spinning and doubling silk, cotton, and other fibrous materials.
CULLOCH, JOHN M <sup>c</sup> -	574	1st March 1860	Reduction of gold, silver and copper ores.
CULPIN, THOMAS -	252	31st Jan. 1860	Improvements in waterclosets and all sanitary vessels that require frequent flushing.

[Cun]

## ALPHABETICAL INDEX OF PATENTEEES

[Dav]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
CUNNINGHAM, HENRY DUNCAN [PRESTON.]	440	17th Feb. 1860	Reefing sails.
CURÉ, FRANÇOIS - - -	692	15th March 1860	An improved metallic window sash. (Patented by Marc Antoine François Mennons.)
CURTIS, THOMAS - - -	136	19th Jan. 1860	Machinery to be used in finishing cloths or fabrics having nap or pile on their surfaces.
CUTCLIFFE, ELIZA - - -	2054	25th Aug. 1860	Machinery for cutting corks and bungs. (Communicated by her late brother.)
CUTTS, JAMES - - -	2746	8th Nov. 1860	Apparatus for ascertaining or indicating the number of persons that may pass through or over any particular place, applicable to omnibuses and other vehicles, theatres, ferries, gardens, baths, and other places.
CUTTS, WILLIAM - - -	633	8th March 1860	Steam-engines.
CYR, JEAN LAFON ST. - -	3188	29th Dec. 1860	Manufacturing fibrous materials, tissues or other fabrics.
CZUGAJEWICZ, PIERRE - -	58	9th Jan. 1860	Stereoscopes.

## D.

DAEHLNE, FRIEDERICH WIL- [HELM.]	2338	26th Sept. 1860	Extracting copper from ores.
DAFT, THOMAS BARNABAS -	227	28th Jan. 1860	Coating iron.
DAFT, THOMAS BARNABAS -	2766	10th Nov. 1860	Fish joints of railways.
DAGRON, AENÉ PRUDENT [PATRICE.]	801	28th March 1860	An improved microscope to be used for exhibiting photographic views and productions.
DAHLKE, JULIUS GUSTAV -	296	4th Feb. 1860	Improved filtering compositions and improvements in filtering vessels and apparatuses.
DAHLL, TELLEF - - -	840	2nd April 1860	Separation of nickel and cobalt from magnetic pyrites and bi-sulphuret of iron or any other sulphur composition.
DAHMEN, MATHIAS ANTHONY [JOSEPH.]	2670	1st Nov. 1860	Protecting ships and other vessels, buildings, works of construction, and other bodies.
DAHMEN, MATHIAS ANTHONY [JOSEPH.]	2625	16th Nov. 1860	Treating of vegetable fibrous substances in the manufacture of paper.
DAKIN, GEORGE - - -	1831	28th July 1860	Machinery employed in covering top rollers used in preparing, spinning and doubling cotton and other fibrous materials.
DAKIN, JOHN - - -	1831	28th July 1860	Machinery employed in covering top rollers used in preparing, spinning and doubling cotton and other fibrous materials.
DALE, JOHN - - -	766	24th March 1860	Preparation of a colouring matter for dyeing textile materials and fabrics and other substances.
DALE, JOHN - - -	814	29th March 1860	Obtaining albumen or analogous substance for use with pigments in calico printing and for other purposes.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
DALE, JOHN - - -	985	19th April 1860	Dyeing cotton yarns or threads and fabrics. (Communicated by August Leonhardt.)
DALE, JOHN - - -	1307	26th May 1860	Obtaining colouring matters for dyeing and printing.
DALGETY, ALEXANDER - -	330	8th Feb. 1860	Watches, clocks, and chronometers.
DALGLISH, ANDREW ADIE -	2881	24th Nov. 1860	Improvements in engraving or for producing printed surfaces.
DAMMANN, MAGLOIRE OLIVIER	205	27th Jan. 1860	An apparatus with chemical process producing fumigations for the cure of the gout, rheumatisms, nervous debility, and disease of the skin.
DANA, EDWARD AUGUSTUS -	2021	22nd Aug. 1860	An invention relating to ordnance as well as fire-arms. (Communicated by John P. Schenkl.)
DANBY, FRANCIS - - -	2458	9th Oct. 1860	An improved anchor.
DANCE, ENOCH - - -	2450	9th Oct. 1860	New or improved machinery for the manufacture of baskets and wicker work.
DANCHELL, FREDERICK LUDE- [WIG HAHN.	1712	16th July 1860	Filters.
DANGERFIELD, JOHN - -	1011	23rd April 1860	Apparatus or machinery for the manufacture of chains.
DANGUY, ——— - - -	1463	15th June 1860	Improvements in dessicating substances and in neutralizing or retaining any foetid gases which may be evolved in the process. (Patented by Richard Archibald Brooman.)
DANION, P. - - -	806	29th March 1860	Steel yards and scales. (Patented by Charles Stevens.)
DARBY, WILLIAM - - -	3166	27th Dec. 1860	Constructing and working stamps for cutting and shaping metals.
DARLEY, WILLIAM - - -	2931	29th Nov. 1860	Portable steam-engines.
DARLING, HENRY - - -	81	12th Jan. 1860	Dressing millstones for cleaning all kinds of small grain having a husk or hull. (Patented by William Henry Orchard.)
DATICHY, FLORIMOND - -	1009	23rd April 1860	Apparatus for utilising the waste steam of steam-engines.
DAVENPORT, WALTER - -	976	18th April 1860	Roller window blinds.
DAVEY, SAMUEL - - -	1234	19th May 1860	Fastenings for attaching buttons, studs, brooches or other ornaments and fastenings to articles of dress and for other uses.
DAVID, ANTOINE - - -	108	14th Jan. 1860	Jacquard apparatus. (Communicated by Ennemond David.)
DAVID, ENNEMOND - - -	108	14th Jan. 1860	Jacquard apparatus. (Patented by Antoine David.)
DAVID, LÉON EMILE - -	163	21st Jan. 1860	An improved break for vehicles.
DAVIDSON, FRANCIS - -	1917	8th Aug. 1860	Marine steam-engines.
DAVIDSON, HENRY - - -	2680	2nd Nov. 1860	Improved apparatus for lowering and disengaging ships' boats from their tackles, parts of said apparatus being applicable to the lowering and disengaging of other heavy bodies or merchandise.
DAVIDSON, WILLIAM -	869	5th April 1860	An apparatus for cutting or screwing pipes and round metal.
DAVIES, CHARLES LANGDON -	1905	7th Aug. 1860	Improved apparatus for printing and embossing.
DAVIES, DAVID - - -	2237	15th Sept. 1860	Apparatus for preventing the explosion of steam boilers.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
DAVIES, GEORGE - -	21	4th Jan. 1860	Improvements applicable to nibs or burners for gas. (Communicated by Monsieur Legris.)
DAVIES, GEORGE - -	660	12th March 1860	Steam-boilers and engines. (Communicated by Pierre Verrier.)
DAVIES, GEORGE - -	1115	3rd May 1860	Manufacture of boots, shoes, and other coverings for the feet; apparatus connected with such manufacture. (Communicated by Alexandre Joseph Duchatel.)
DAVIES, GEORGE - -	1217	17th May 1860	A system of chromato-topo-chronographic charts intended to facilitate the study of universal history and chronology. (Communicated by Charles Rikli-Valet.)
DAVIES, GEORGE - -	1459	15th June 1860	An improved life-preserving mattress. (Communicated by Louis Bauhoefer.)
DAVIES, GEORGE - -	1542	25th June 1860	Improvements in needles used in machinery for manufacturing ribbed stocking fabric. (Communicated by Hilaire Adrien Quinquarlet.)
DAVIES, GEORGE - -	1670	11th July 1860	Improved apparatus for supplying steam-boilers with water. (Communicated by Messrs. Gargan, & Co.)
DAVIES, GEORGE - -	2048	25th Aug. 1860	Construction of bomb shells. (Communicated by William Rice.)
DAVIES, GEORGE - -	2216	13th Sept. 1860	Improvements in the processes of cementation or case hardening and softening iron. (Communicated by Jules Cazanave.)
DAVIES, GEORGE - -	2241	15th Sept. 1860	Improvements in lamps for burning coal oil and other like combustible fluids, part of which improvements is applicable to gas fittings. (Communicated by J. T. Van Kirk.)
DAVIES, GEORGE - -	2503	15th Oct. 1860	An improved method of and apparatus for refrigerating and freezing. (Communicated by Ferdinand Philippe Edouard Carré.)
DAVIES, GEORGE - -	2664	31st Oct. 1860	Boxes for railway carriage axles and other shafts. (Communicated by Isaac P. Wendell.)
DAVIES, GEORGE - -	2665	31st Oct. 1860	Manufacture of boots, shoes, and other coverings for the feet; apparatus connected with such manufacture. (Communicated by Alexandre Joseph Duchatel.)
DAVIES, GEORGE - -	2706	5th Nov. 1860	Travelling bags. (Communicated by Messrs. Keller and Co.)
DAVIES, GEORGE - -	3008	8th Dec. 1860	Construction of steam-boilers. (Communicated by Richard Montgomery.)
DAVIES, GEORGE - -	3064	15th Dec. 1860	Building bridges, ships, or other structures of iron or other metal. (Communicated by Richard Montgomery.)
DAVIES, GEORGE - -	3085	15th Dec. 1860	Rolling or corrugating plates of metal; machinery or apparatus employed for such purposes. (Communicated by Richard Montgomery.)
DAVIES, GEORGE - -	3083	15th Dec. 1860	Construction of iron or other metal beams; machinery or apparatus employed for such purpose. (Communicated by Richard Montgomery.)

[Dav]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[D'A]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
DAVIES, GEORGE - -	3191	29th Dec. 1860	Printing calicoes and other fabrics. (Communicated by Gabriel Descat.)
DAVIES, JOHN - -	824	30th March 1860	Manufacture of gun powder.
DAVIES, JOHN - -	2151	6th Sept. 1860	An improved application of material to the manufacture of coupling apparatus to be employed in connecting locomotive engines, tenders and carriages together upon railways.
DAVIES, WILLIAM - -	545	28th Feb. 1860	Moveable window shutters
DAVIS, DANIEL - -	215	27th Jan. 1860	Improved machinery for printing addresses on newspapers and on wrappers or envelopes, also for punching or indentating wooden or other blocks or plates from which the addresses are to be printed. (Patented by William Edward Newton.)
DAVIS, ISAAC NOAH - -	1749	19th July 1860	Producing spirit from rice, maize, barley, or other grain. (Communicated by A. E. Ripoché.)
DAVIS, JOHN - -	104	14th Jan. 1860	Improvements in music stands, part of which is also applicable to tents for military and other purposes.
DAVIS, JOHN - -	1673	11th July 1860	Apparatus for the prevention of accidents at mines or pits.
DAVIS, JOSEPH - -	1632	5th July 1860	A new and useful improvement in the carding-machine. (Patented by Joseph Noone.)
DAVIS, ROBERT WINSLOW -	215	27th Jan. 1860	Improved machinery for printing addresses on newspapers and on wrappers or envelopes, also for punching or indentating wooden or other blocks or plates from which the addresses are to be printed. (Patented by William Edward Newton.)
DAVIS, WILLIAM - -	405	14th Feb. 1860	Improvements in the manufacture of bread and in apparatus applicable for the same.
DAVISON, JOHN S. - -	261	1st Feb. 1860	Submarine telegraphic cables. (Patented by Alexander Stoddart.)
DAVISON, ROBERT - -	478	22nd Feb. 1860	Boiling worts and other liquids.
DAVISON, ROBERT - -	3027	10th Dec. 1860	Apparatuses for drying and heating.
DAWBARN, ROBERT - -	2945	1st Dec. 1860	An apparatus for stopping rents or holes in fire-engine hose and other elastic tubes or pipes. (Communicated by John S. Mackay.)
DAWES, JOHN SAMUEL - -	358	10th Feb. 1860	Breech loading fire-arms and ordnance.
DAWES, THOMAS GEAST - -	123	17th Jan. 1860	A new or improved compressed air and exhaustion hammer.
DAWES, THOMAS GEAST - -	991	20th April 1860	Working hammers by compressed air.
DAWES, WILLIAM - -	138	19th Jan. 1860	Manufacture of metal shoes for beasts of draught and burden; machinery or apparatus to be used in such manufacture.
DAWSON, DAVID - -	1528	23rd June 1860	Dyeing of cotton wool (or waste) black and and brown.
DAWSON, JAMES - -	212	27th Jan. 1860	Reburning animal charcoal; application of the products arising therefrom, apparatus employed therein.
D'ARGY, EDMOND ARMAND [LOUIS.]	1331	30th May 1860	An improved candlestick.
D'ARGY, ROLAND - -	583	2nd March 1860	Apparatus for raising water.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
D'AUBREVILLE, LEOPOLD -	1059	27th April 1860	Manufacture of metallic boxes or vessels used to contain preserved alimentary provisions or other substances, apparatus and machinery employed therein. (Communicated by Alfred Henry Rémond.)
D'AUXY, GASTON CHARLES [ANGE MARQUIS.	1634	28th July 1860	An improved apparatus for the preservation of corn.
DE BANVILLE, ALFRED -	972	18th April 1860	A method of and apparatus for communicating to railway passengers the names of the stations which the train successively approaches. (Patented by Richard Archibald Brooman.)
DE BARAN, FERDINAND [GABRIEL MIGEOT.	2049	25th Aug. 1860	An improved method of stopping bottles or other vessels for containing gaseous liquids.
DE BARY, JULIUS -	2484	12th Oct. 1860	Machinery for cutting and packing cigars. (Patented by Richard Archibald Brooman.)
DE BATHE, HENRY PERCIVAL	2823	16th Nov. 1860	Construction of plates or shields for the purpose of resisting shot and other projectiles.
DE BAYELT, FRANÇOIS JOSEPH	3089	15th Dec. 1860	Steam-engines. (Patented by Alexander Prince.)
DE BERGUE, CHARLES -	82	12th Jan. 1860	Improvements in machinery for rivetting parts of which are applicable to machines for punching metal.
DE BERGUE, CHARLES -	1944	11th Aug. 1860	Permanent way of railways.
DE BLOCK-STEVENS, ERME- [LINDE.	1292	25th May 1860	Ladies' stays.
DEBOUSSOIS, FRANÇOIS JOSEPH [EDOUARD DUCLOS.	1282	23rd May 1860	Manufacture of tubes, hollow axles, shafts, gun barrels, masts and other tubular metal articles.
DEBOUSSOIS, FRANÇOIS JOSEPH [EDOUARD DUCLOS.	1283	23rd May 1860	Treatment of bituminous rocks for the extraction of bitumen therefrom; application of the residuum to various useful purposes.
DE BUFFON, BENJAMIN [NADAULT.	3193	31st Dec. 1860	Apparatuses for clarifying and purifying water and other liquids.
DE BUYER, JEAN BAPTISTE [JOSEPH.	1145	9th May 1860	A new system of cast iron cart wheels.
DE CADEROUSSE, PERRIN -	1911	8th Aug. 1860	An improved mode of binding up brooms, together with the machine used for that purpose. (Patented by Charles Stevens.)
DE CARVALHO, ANTONIO JOA- [QUIM PEREIRA.	1378	5th June 1860	Improvements in beams applicable in the construction of bridges and other structures, and also for the floors and ceilings of houses.
DE CHAUVEAU, CHARLES -	23	4th Jan. 1860	An improved fertilizing compound for agricultural purposes. (Patented by Marc Antoine François Mennons.)
DE FONTENAY, ANSELME LOUIS [MARIE.	2165	7th Sept. 1860	Manufacture of cast steel and the remanufacture of old steel. (Patented by Charles Cowper.)
DE GOY, ANDRÉ LOUIS [HYACINTHE.	3077	14th Dec. 1860	Signalling from one part of a railway train to another. (Patented by William Clark.)

De]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[De

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
DE IONGH, CHARLES - -	968	17th April 1860	An improved mode of mounting the needles, points and guides used in knitting and lace machinery.
DE KERAVENAN, FRANCIS [BERNARD.	2530	17th Oct. 1860	Lamps. (Patented by Alfred Vincent Newton.)
DE KERSOLON, VISCOUNT -	1731	17th July 1860	Locks or fastenings. (Patented by Edward Loysel.)
DE LA FERTÉ, FERDINAND JEAN [JOUBERT.	149	20th Jan. 1860	Improvements in reproducing photographic and other pictures, engravings, prints, devices, and designs on the surfaces of glass, ceramic and other substances requiring to be fired to fix the same thereon. (Partly communicated by Henry Garnier.)
DE LA MARE, JOHN - -	2579	23rd Oct. 1860	An improved lubricating composition to be used with other lubricators.
DE LAIRE, GEORGES - -	1300	26th May 1860	A new process for manufacturing red and violet colouring matter.
DE LOUVRIE, J. CHARLES -	2199	12th Sept. 1860	Moulding without models.
DE MAEGT, JOSEPH - -	1635	6th July 1860	Manufacture of paper. -
DE MANIQUET, JEAN ANTOINE.	799	28th March 1860	Winding, doubling, twisting and spinning silk, cotton, wool, flax, hemp, cord, and other filamentous materials.
DE MÉNONVILLE, MICHEL ANTOINE FRANÇOIS THI- [BAUD.	610	6th March 1860	An improved machine for drying fecula. (Patented by William Edward Gedge.)
DE MÉNONVILLE, MICHEL ANTOINE FRANÇOIS THI- [BAUD.	611	6th March 1860	Improved machinery or apparatus for washing fecula. (Patented by William Edward Gedge.)
DE MEYER, CHARLES JOSEPH	1241	21st May 1860	Pianofortes.
DE MIRABEL, VISCOUNT DU [VIGIER.	2811	16th Nov. 1860	Sheet-iron tiles. (Patented by Charles Stevens.)
DE MOCOMBLE, ANTOINE [JULES ALFRED CAVELIER.	3165	26th Dec. 1860	Soothing-irons. (Patented by John Henry Johnson.)
DE MORNAY, HENRY -	1899	6th Aug 1860	Apparatus for sorting or preparing tea for the market.
DE NEVIERS, ALBRECHT -	1704	14th July 1860	Breech loading fire-arms.
DE NORMANDY, ALPHONSE [RENÉ LE MIRE.	786	27th March 1860	Obtaining fresh water from salt water.
DE PARIENTÉ, LEON - -	422	16th Feb. 1860	An improved machine for the manufacture of paper and other bags. (Patented by Thomas Green.)
DE RUDDER, PIERRE JEAN -	1663	10th July 1860	Ornamenting glass surfaces. (Patented by François Boex.)
DE RUOLZ, HENRI CATH- [ERINE CAMILLE.	2165	7th Sept. 1860	Manufacture of cast steel and the remanufacture of old steel. (Patented by Charles Cowper.)
DE ST. JUST, LOUIS ARMAND [LE BLANC.	29	5th Jan. 1860	An improved machine for cutting soft and hard stones in open quarries.
DE SOURDEVAL, ALFRED LA- [LOUËL.	1027	24th April 1860	Manufacture of ammonia. (Patented by William Clark.)
DE SOURDEVAL, ALFRED LA- [LOUËL.	1171	11th May 1860	Manufacture of cyanides of barium and strontium. (Patented by William Clark.)
DE SOURDEVAL, ALFRED LA- [LOUËL.	2023	22nd Aug. 1860	Preparation or manufacture of manure. (Patented by William Clark.)
DE STRADA, EDOUARD ARMAND [COUNT.	1881	3rd Aug. 1860	Horses' bridles.



De]

## ALPHABETICAL INDEX OF PATENTEES

[Del

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
DE TENCIN, GUÉRIN - -	2252	17th Sept. 1860	A new medico-chirurgical bleeding instrument. (Patented by Charles Stevens.)
DE TIVOLI, VITAL - -	38	6th Jan. 1860	A swimming and floating apparatus.
DE TIVOLI, VITAL - -	1428	11th June 1860	Improvements in civil and military ambulances.
DE VERNEZ, AUGUSTE MARIE [ALEXANDRE DOMINE.	301	4th Feb. 1860	An improved valve or cock for regulating or stopping the passage of gas, steam, water, or other fluids.
DE VERNEZ, AUGUSTE MARIE [ALEXANDRE DOMINE.	302	4th Feb. 1860	An improved apparatus for carburating hydrogen or other gas for illuminating purposes.
DE VERNEZ, AUGUSTE MARIE [ALEXANDRE DOMINE.	2220	14th Sept. 1860	Treating coal naphtha; apparatus employed therein.
DEACON, HENRY - -	352	9th Feb. 1860	Manufacture of soda.
DEAN, EDWARD - - -	827	30th March 1860	Machinery for the manufacture of looped fabrics.
DEAN, JOHN - - - -	827	30th March 1860	Machinery for the manufacture of looped fabrics.
DEAN, THOMAS - - -	498	24th Feb. 1860	Machinery or apparatus for obtaining motive-power.
DEAN, WILLIAM - - -	517	25th Feb. 1860	Manufacture of wreaths or trimmings for ladies' bonnets and other articles of dress.
DEANE, EDWARD - - -	1470	16th June 1860	Kitchen ranges or apparatus for cooking.
DEANE, EDWARD - - -	2086	29th Aug. 1860	Apparatus for facilitating culinary roasting.
DEANE, EDWARD - - -	2170	7th Sept. 1860	An improved rotary cooking apparatus.
DEANE, JOHN - - - -	762	23rd March 1860	Breech loading fire-arms. (Partly communicated by Captain Alexandre Delvigne)
DEANE, JOHN, junior - -	762	23rd March 1860	Breech loading fire-arms. Partly communicated by Captain Alexandre Delvigne)
DEARDEN, HENRY - -	2851	21st Nov. 1860	Machinery or apparatus for punching washers for giving the necessary drag or friction to the spindles and bobbins of spinning machinery and similar purposes; method of using or working the said washers.
DEAVIN, MARTIN - -	2497	13th Oct. 1860	Gymnastic apparatuses known as see-saws and an improved mode of working the same.
DEAVIN, MARTIN - -	2992	6th Dec. 1860	An improved apparatus applicable as a fire-escape, also to the raising and lowering of weights.
DEBAIN, ALEXANDER - -	2540	18th Oct. 1860	A new or improved sounding apparatus applicable to all musical instruments having key-boards.
DECORCE, FRANÇOISE - -	2038	24th Aug. 1860	Manufacture of flexible tubes for the conveyance of water, illuminating gas or other fluids.
DELABARRE, CHRISTOPHE [FRANÇOIS.	627	8th March 1860	Improved apparatus to be used in propelling gases and forcing liquids.
DELAFIELD, EDWARD THOMAS	666	5th April 1860	Improved apparatus and processes for decomposing neutral fatty bodies or matters into fatty acids and glycerine, and for the distillation thereof. (Communicated by Louis Martin.)

Del]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Den

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
DELAMARE, WILLIAM HENRY	2129	4th Sept. 1860	An improved machine for cleansing and peeling grain and seeds.
DELAPORTE, ATHALIS -	2616	26th Oct. 1860	Uniting water, gas, and other pipes and tubes. (Patented by Richard Archibald Brooman.)
DELAURETIS, GAETANO -	1453	14th June 1860	Preventing or detecting forgery or alteration of figures in cheques, bank notes, drafts, bills of exchange, promissory notes, and other monetary bills.
DELCOURT, CHARLES -	2575	22nd Oct. 1860	Feeding steam-boilers. (Patented by William Edward Gedge.)
DELESALLE, ALPHONSE -	2381	29th Sept. 1860	Means and apparatuses used in steam-engines for expelling out of the cylinders the condensed water, and to employ this water for the alimentation of boilers.
DELHARPE, ALPHONSE -	394	13th Feb. 1860	Apparatus used for stretching, drying, and finishing woven fabrics. (Patented by William Clark.)
DELOUETTE, FRÉDÉRIC GUS- TAVE PIERRET.	612	6th March 1860	Lathes. (Patented by William Edward Gedge.)
DELVIGNE, CAPTAIN ALEX- [ANDRE.	762	23rd March 1860	Breach-loading fire-arms. (Patented by John Deane, John Deane, junior, and William Harding.)
DEMING, JAMES HERVEY -	881	7th April 1860	Axles or journals in combination with lubricating axle-boxes for railway and other carriages. (Patented by William Clark.)
DEMING, JAMES HERVEY -	2850	21st Nov. 1860	Improvements in journal or axle-boxes for railway carriages, whereby to effect better lubrication of the frictional surfaces. (Patented by William Clark.)
DEMPSEY, WILLIAM -	2471	10th Oct. 1860	Applying springs to railway trucks and to railway and other carriages.
DÉNÉCH, JEAN -	2194	11th Sept. 1860	An electric controller for indicating the relative position of trains on railways.
DENHAM, WILLIAM THOMAS -	2688	2nd Nov. 1860	Producing devices on velvet paper and other fabrics or materials.
DENIS, JULIEN -	1198	15th May 1860	Preparation of vegetable matters as a pulp for the manufacture of paper. (Communicated by Henry Boucket.)
DENISON, HENRY DEAN -	367	11th Feb. 1860	Construction of suspended weighing machines, applicable to cranes and other lifting apparatus.
DENLEY, WILLIAM -	1125	5th May 1860	Fire-places and flues.
DENNIS, THOMAS HUNGATE [PRESTON	905	11th April 1860	Construction of iron buildings or glazed structures for horticultural or other purposes.
DENNISON, A. L. -	3152	22nd Dec. 1860	Watches. (Patented by Alfred Vincent Newton.)
DENNY, ABRAHAM -	276	2nd Feb 1860	An improved method of and apparatus for singeing pigs.
DENNY, ABRAHAM -	996	20th April 1860	A revolving feed apparatus as applied to singeing pigs to facilitate the introduction of the carcasses into the singeing apparatus.
DENNY, ABRAHAM -	3097	17th Dec. 1860	Apparatus for singeing the carcasses of dead pigs.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
DENNY, EDWARD MAYNARD -	276	2nd Feb. 1860	An improved method of and apparatus for singeing pigs.
DENNY, EDWARD MAYNARD -	996	20th April 1860	A revolving feed apparatus as applied to singeing pigs to facilitate the introduction of the carcasses into the singeing apparatus.
DENNY, EDWARD MAYNARD -	3097	17th Dec. 1860	Apparatus for singeing the carcasses of dead pigs.
DENSMORE, BYRON - -	2780	13th Nov. 1860	An improved construction of feathering paddle wheels. (Patented by Alfred Vincent Newton.)
DENTON, HENRY RICHARD [JOHN	518	25th Feb. 1860	Hay rakes, horse rakes, and similar agricultural implements.
DEPOULLY, ERNEST - -	2432	8th Oct. 1860	Preparation of certain colouring matters, and also a process of printing and dyeing woven fabrics, yarns, and other substances. (Patented by Edward Joseph Hughes.)
DEPOULLY, PAUL - -	176	24th Jan. 1860	Manufacture of certain colouring matters by the oxidation of salts of aniline and other salts of a similar nature. (Patented by Edward Joseph Hughes.)
DEPOULLY, PAUL - -	2432	8th Oct. 1860	Preparation of certain colouring matters, and also a process of printing and dyeing woven fabrics, yarns, and other substances. (Patented by Edward Joseph Hughes.)
DERBY, LYMAN - -	1208	16th May 1860	Locks for safes, doors, and other purposes. (Patented by William Edward Newton.)
DERENNE, J. B. - -	1745	18th July 1860	An improved screw cutting machine. (Patented by Charles Stevens.)
DERHAM, RICHARD JONES -	468	21st Feb. 1860	Butter churns.
DERING, GEORGE EDWARD -	2867	23rd Nov. 1860	Permanent ways of railways.
DEROIDE, ANDRÉ - -	2785	13th Nov. 1860	An improved method and apparatus for bleaching all descriptions of vegetable textile fabrics and yarns.
DES GRANGES, BARON OTTO -	1184	14th May 1860	Iron pavements. (Patented by William Edward Newton.)
DESAINT, LOUIS CONSTANT -	2507	15th Oct. 1860	An improved machine for cutting out bricks and drain pipes. (Patented by Charles Stevens.)
DESBOROUGH, SPENDLOVE -	3163	26th Dec. 1860	Manufacture of boots and shoes; means and apparatus employed for uniting and preparing surfaces of leather and similar materials for this and other purposes.
DESCAT, GABRIEL - -	3191	29th Dec. 1860	Printing calicoes and other fabrics. (Patented by George Davies.)
DESCHAMPS, MARCEL GRIPON	1389	6th June 1860	Machinery for carving and sculpturing.
DESGABRIEL, JOSEPH - -	850	3rd April 1860	An improved apparatus for making signals on railways. (Patented by William Armand Gilbee.)
DESMARES, JULES JUHEL -	592	3rd March 1860	A liquid or novel preparation to be applied to wools. (Patented by William Edward Gedge.)
DESPINOY, AUGUSTIN JOSEPH	1764	20th July 1860	Preparing the livers of salt water fish. (Patented by Charles Constant Joseph Guffroy.)
DESTAS, PIERRE CHARLES [DÉSIRÉ.	565	1st March 1860	A new engine working by wind or water.

Des]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Din

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
DESTREEM, RAOUL JACQUES [MARIE.]	1914	8th Aug. 1860	An improved excavating machine for boring tunnels and performing other excavating operations. (Patented by Richard Archibald Brooman.)
DESIGNES, PETER HUBERT -	537	27th Feb. 1860	Apparatuses for exhibiting photographic, stereoscopic and other pictures, models, figures and designs.
DEVILLEPOIX, GUSTAVE -	711	17th March 1860	Application of paper to filtering fluids. (Patented by William Clark.)
DEVINE, A. B. - - -	596	5th March 1860	Manufacture of soap. (Patented by Joseph Broel.)
DEWAR, HENRY ANDREW -	4	2nd Jan. 1860	Moulding or applying india-rubber as the bases of artificial teeth; apparatus for the same.
DEWICK, JOHN - - -	1525	22nd June 1860	Bobbin net or twist lace machinery.
DEYEUX, NICOLAS THEOPHILE	2649	29th Oct. 1860	An improved method of manufacturing railway wheel tyres and other articles of steel. (Patented by Michael Henry.)
DEZAUX-LACOUR, A. L. - -	292	4th Feb. 1860	An improved means of joining surfaces of leather. (Patented by Marc Antoine François Mennons.)
DICKERMAN, ELLIOTT - -	2322	24th Sept. 1860	Machinery or apparatus for washing and wringing clothes and similar articles. (Patented by John Henry Johnson.)
DICKERSON, EDWIN N. - -	1088	30th April 1860	Apparatus for working the valves of steam-engines. (Patented by George Tomlinson Bouzfield.)
DICKINS, THOMAS - - -	1296	25th May 1860	Machinery or apparatus for spinning and doubling silk, cotton, and other fibrous materials.
DICKINSON, JOSEPH -	1758	20th July 1860	Machinery for retarding or stopping railway or other carriages, and for other purposes where breaks are applicable.
DICKSON, JOHN FARMERLEY -	65	10th Jan. 1860	Construction of sewing-machines, together with the apparatus connected therewith.
DICKSON, JOHN FARMERLEY -	2107	31st Aug. 1860	Sewing-machines.
DIETZ, ANDREW - - -	2572	22nd Oct. 1860	A new and useful method of treating skins and hides, during or after the process of tanning or finishing them, and of aiding the tanning of hides and skins.
DIETZ, ANDREW - - -	2573	22nd Oct. 1860	An improved process or method for tanning skins, hides, &c. and converting them into leather.
DIETZ, DAVID - - -	368	11th Feb. 1860	An improved oil box for lubricating the axle-trees of railway carriages or waggons, applicable also to the shafts of all kinds of machines.
DIMOCK, IRA - - -	3180	28th Dec. 1860	Machinery for cleaning, sorting according to size, and doubling silk and other threads. (Partly communicated by Goodrich Holland.)
DIMOCK, LUCIUS - - -	1613	4th July 1860	A new and improved machine for stretching and glossing silk. (Patented by William Skinner.)
DINGLER, OTTO - - -	231	30th Jan. 1860	Machinery for treating cotton and other fibrous materials.

[Din]

## ALPHABETICAL INDEX OF PATENTEEES.

[Dop]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
DINSMORE, DAVID CROSMAN -	1535	23rd June 1860	An improved churn. (Communicated by Rufus Lapham and Riley P. Wilson.)
DINSMORE, DAVID CROSMAN -	1539	25th June 1860	Machinery for splitting leather and cutting the heels of boots and shoes.
DINSTON, HENRY - - -	1648	9th July 1860	Hand saws.
DISTIN, HENRY JOHN - - -	2749	8th Nov. 1860	Instruments for determining the movement of musical compositions, and which are also applicable for other purposes.
DITCHFIELD, HENRY - - -	1315	28th May 1860	Machinery or apparatus for folding woven fabrics.
DIXON, ADAM - - -	1110	3rd May 1860	Screw stocks and dies.
DIXON, ADAM - - -	1854	31st July 1860	Improvements in knife cleaning machines.
DIXON, A. H. - - -	407	14th Feb. 1860	Apparatus for separating impurities from grain. (Patented by George Tomlinson Bousfield.)
DIXON, JOHN - - -	186	25th Jan. 1860	Rolling and shaping iron and steel for manufacturing railway wheels.
DOCKRAY, JACOB - - -	2643	29th Oct. 1860	Machinery for carding, opening, and straightening tow and other fibrous substances.
DODDS, MATTHEW - - -	1923	8th Aug. 1860	Machinery for moulding, forming, or shaping articles of iron and other malleable metals, and for shearing or cutting iron and other metals.
DODGE, GEORGE POMEROY -	2095	30th Aug. 1860	Pumps; apparatus for working the same. (Communicated by James M. Edney.)
DODMAN, GEORGE - - -	3175	27th Dec. 1860	Hoists.
DODSON, SILAS - - -	679	14th March 1860	Cleaning rice; machinery or apparatus employed therein. (Patented by John Henry Johnson.)
DOERING, FREDERICK BERN- [HARD.]	1159	11th May 1860	Apparatus for governing and regulating the speed of marine engines.
DOIDI, GABRIEL - - -	1975	15th Aug. 1860	Preservation of meats.
DOLLIER, HENRI - - -	1824	27th July 1860	Belts. (Patented by Richard Archibald Brooman.)
DOLLIER, HENRY - - -	843	2nd April 1860	Buttons. (Patented by Richard Archibald Brooman.)
DONALD, WILLIAM Mc - - -	1136	8th May 1860	Military saddles; stirrup-irons to be used therewith.
DONALDSON, ROBERT B - - -	3114	19th Dec. 1860	Apparatus for closing doors and keeping them closed. (Patented by William Spence.)
DONISTHORPE, GEORGE ED- [MOND.]	181	24th Jan. 1860	Making cop tubes.
DONISTHORPE, GEORGE ED- [MOND.]	2126	3rd Sept. 1860	Sizing yarn or thread previous to warping.
DONKIN, THOMAS - - -	189	25th Jan. 1860	Paper making machines.
DONNET, ALPHONSE VITAL -	1852	31st July 1860	An improved registering water meter.
DOOLEY, JOHN - - -	1457	15th June 1860	An improved equilibrium slide valve applicable to engines worked by steam or other motive-power.
DOPFF, THEODORE - - -	416	15th Feb. 1860	Manufacture of fabrics suitable for carpets, hangings, furniture, stuffs, and the like. (Patented by Richard Archibald Brooman.)



[Dor]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Du

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
DORGEVAL, POLYDORE - -	2888	24th Nov. 1860	Machinery used in the manufacture of silk and other fabrics.
DOUBLET, THOMAS - - -	1639	6th July 1860	Rifles and other fire-arms.
DOUGALL, ALEXANDER M <sup>c</sup> - -	162	21st Jan. 1860	Preparation of materials used for sizing, dressing, or finishing yarns or threads, and woven fabrics, applicable also to sizing paper.
DOUGALL, ALEXANDER M <sup>c</sup> - -	2510	15th Oct. 1860	Materials or compositions for destroying vermin on sheep and other animals, and for protecting them therefrom.
DOUGALL, JAMES DALZIEL - -	1128	7th May 1860	Breech loading fire-arms.
DOUGLAS, JOHN MONTEATH - -	1853	31st July 1860	Improvements in the delivery of the cut crop from reaping and mowing machines.
DOULL, ALEXANDER - - -	1621	4th July 1860	Excavating or clearing away earth, sand, and other substances, prior to forming foundations under water and otherwise.
DOWIE, ANDREW LINMERE - -	1077	28th April 1860	Gas burners pressure regulating apparatus for the same.
DOWLER, GEORGE - - -	1306	26th May 1860	Machinery for the manufacture of boot heels and tips, coins, medals, tokens, checks, and such like articles.
DOWN, JONATHAN - - -	2525	17th Oct. 1860	Obtaining copper, silver, tin, and several other metals from their ores, or any other natural or artificial compound containing one or more of these metals.
DOWNING, THOMAS MARSHALL	1812	26th July 1860	Tanks, vats, or vessels to be used for holding, keeping, or storing of malt liquors, wines, spirits, and other liquids for human consumption.
DRAY, WILLIAM - - -	1468	16th June 1860	Reaping and mowing machines.
DRENSEL, ROBERT - - -	1479	18th June 1860	Manufacture of yeast.
DRENSEL, ROBERT - - -	2738	7th Nov. 1860	Stoves.
DREW, VALORUS - - -	326	7th Feb. 1860	Fittings of sun shades or roller blinds. (Patented by William Edward Newton.)
DREWE, HENRY GREGORY - -	2814	16th Nov. 1860	Propelling vessels; apparatus or mechanism for the same.
DREYFUS, ISAAC - - -	2650	30th Oct. 1860	Rolling iron; machinery employed therein.
DRIGGS, SPENCER BARTHOLOMEW.	969	17th April 1860	Pianofortes. (Patented by William Edward Newton.)
DRIVER, JEREMIAH - - -	572	1st March 1860	Means or apparatus used in washing, wringing, and mangling fabrics.
DROMART - - -	235	30th Jan. 1860	Apparatus for preparing and clarifying resinous substances. (Patented by José Luis.)
DRUBAY, ISAIE - - -	350	9th Feb. 1860	Scouring wool; machinery or apparatus employed therein. (Patented by Edward Thomas Hughes.)
DRUKKER, MEYER - - -	914	12th April 1860	Clocks.
DU MOTAY, CYPRIEN MARIE [TERRIE.]	1206	16th May 1860	Manufacture and application to fibres and fabrics of a new blue colour and compounds of the same with other colours. (Patented by Charles Couper.)
DU TREMBLEY, PROSPER VER- [DAT.]	1737	18th July 1860	Break-apparatus suited for railway carriages and for other purposes.
DU VIGIER, COUNT - - -	2811	16th Nov. 1860	Sheet-iron tiles. (Patented by Charles Stevens.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
DUBOIS, LOUIS - - -	931	13th April 1860	Printing rollers.
DUCASSE, PAUL - - -	1719	16th July 1860	An improved clip for holding tickets and other articles. (Patented by Richard Archibald Brooman.)
DUCHATEL, ALEXANDRE JO- [SEPH.	1115	3rd May 1860	Manufacture of boots, shoes, and other coverings for the feet; apparatus connected with such manufacture. (Patented by George Davies.)
DUCHATEL, ALEXANDRE JO- [SEPH.	2665	31st Oct. 1860	Manufacture of boots, shoes, and other coverings for the feet; apparatus connected with such manufacture. (Patented by George Davies.)
DUCHÈNE, AUGUSTE - -	1519	22nd June 1860	Saddlery and harness. (Patented by William Edward Gedge.)
DUCKHAM, HENRY ALEX- [ANDER FREDERICK.	2532	17th Oct. 1860	Gas meters and regulators
DUCLOS, EMILE - - -	972	18th April 1860	A method of and apparatus for communicating to railway passengers the names of the stations which the train successively approaches. (Patented by Richard Archibald Brooman.)
DUDGEON, RICHARD - -	1484	19th June 1860	A portable hydraulic punch. (Patented by Michael Baragwanath.)
DUDGEON, RICHARD - -	3076	14th Dec. 1860	Hydraulic punching apparatus. (Patented by John Phillips Baragwanath.)
DUFAY, ——— - -	2849	21st Nov. 1860	Manufacture of boots and shoes and of a new material to be employed therein, which material is applicable to various other useful purposes. (Patented by John Henry Jokason.)
DUFÉY, FRANÇOIS AUGUSTE -	222	28th Jan. 1860	Improvements in the steeling and cementation of metals. (Patented by John Henry Jokason.)
DUFOSSÉ, EUGÈNE - -	1318	29th May 1860	A system of skeleton or frame work with continuous free air currents applicable to the construction and improvement of seats of any description, mattresses, saddles and upholstery generally, with a view to render them "hygienic."
DUFURNEL, A. - -	666	13th March 1860	Apparatus for washing or dressing ores and analogous substances. (Patented by William Edward Gedge.)
DUGDALE, EDWARD - -	1321	29th May 1860	Construction of journals and bearings for shafts, spindles, and other similar articles.
DUGDALE, EDWARD - -	1822	27th July 1860	Looms for weaving.
DUGDALE, JOHN, junior -	1321	29th May 1860	Construction of journals and bearings for shafts, spindles, and other similar articles.
DUHESME, LOUIS JULES -	2165	7th Sept. 1860	Manufacture of cast steel and the remanufacture of old steel. (Patented by Charles Cowper.)
DUHOUSSET, J. D. - -	3121	19th Dec. 1860	Treatment of caoutchouc, and the employment of a product obtained thereby for lubricating and coating bodies. (Patented by Richard Archibald Brooman.)
DUJARDIN, PIERRE ANTOINE [JOSEPH	465	23rd Feb. 1860	Printing telegraphs.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
DUJARIC, PIERRE - -	1850	30th July 1860	Manufacture of hats. (Patented by William Spence.)
DUKE, JAMES - - -	2550	18th Oct. 1860	Construction of life and other boats.
DULAC, EDOUARD LEOPOLD -	1014	23rd April 1860	Machinery or apparatus for printing woven or other fabrics or tissues. (Patented by George Henry Birkbeck.)
DULOS, PIERRE EDELESTAN [STANISLAS]	447	18th Feb. 1860	Improved process for engraving metallic surfaces either in relief or sunk lines, applicable to copper plate presses or to ordinary printing presses.
DULUD, JACQUES MICHEL -	1778	23rd July 1860	A method of and machinery for goffering or impressing, colouring, and gilding or otherwise covering with metal, leather and fabrics and substances in a sheet state. (Patented by Richard Archibald Brooman.)
DUMÉRY, CONSTANT JOUFFROY	2988	5th Dec. 1860	A new or improved apparatus for extracting from water or any liquid the bodies in dissolution or in suspension contained therein.
DUMONT, CHARLES JOSEPH [EUGÈNE]	1600	3rd July 1860	Machinery or apparatus for separating minerals and substances of different specific gravities.
DUNBAR, THOMAS HENRY -	489	23rd Feb. 1860	Cigarettes.
DUNCAN, CHARLES STEWART -	2980	4th Dec. 1860	Construction of electric telegraph cables or ropes.
DUNCAN, JAMES - - -	212	27th Jan. 1860	Reburning animal charcoal; application of the products arising therefrom; apparatus employed therein.
DUNN, THOMAS - - -	221	28th Jan. 1860	Machinery and apparatus for altering the position of locomotive engines and carriages, and for preventing injury and accidents on railways.
DUNNICLIFF, JOHN DEARMAN	1225	17th May 1860	Bobbin net or twist lace machines.
DUPLOMB, CLÉMENT, père -	2472	11th Oct. 1860	An improved crinoline protector or double petticoat. (Patented by Charles Stevens.)
DUPLOMB, JEAN MARIE, fils -	2472	11th Oct. 1860	An improved crinoline protector or double petticoat. (Patented by Charles Stevens.)
DUPONT, LOUIS NICOLAS GUIL- [LAUME.]	892	9th April 1860	A new woven fabric and method of manufacturing the same. (Patented by Richard Archibald Brooman.)
DUPOUY, VITAL - - -	2785	13th Nov. 1860	An improved method and apparatus for bleaching all descriptions of vegetable textile fabrics and yarns.
DURAND, AUGUSTE - - -	1598	2nd July 1860	Manufacture of hats. (Patented by Richard Archibald Brooman.)
DURAND, FRANÇOIS - - -	687	15th March 1860	Twisting fibrous materials; apparatus employed therein. (Patented by Michael Henry.)
DURAND, FRANÇOIS - - -	1611	3rd July 1860	An improved means of driving spindles used in spinning machinery, applicable also to the communicating of rotary motion for other purposes.
DURAND, FRANÇOIS - - -	1612	3rd July 1860	An improved mode of purifying the Thames and other tidal rivers.
DURAND, FRANÇOIS - - -	1697	13th July 1860	Improvements in looms and in the jacquard apparatus of looms. (Patented by Michael Henry.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
DURAND, HYPOLITTE - -	959	17th April 1860	An improved steam-mill. (Patented by Charles Stevens.)
DURAND, JEAN CLAUDE - -	1044	26th April 1860	A new system of drainage for towns when affected by the tide.
DURAND, JULES EMILE - -	341	8th Feb. 1860	Manufacture of poppy paper.
DUREAU, JEAN BAPTISTE -	2571	22nd Oct. 1860	Improvements in apparatuses for evaporating and concentrating, specially applicable to the manufacture of sugar. (Patented by Richard Archibald Brooman.)
DURHAM, GEORGE WILSON -	973	18th April 1860	Machines for washing rags, pulp, and other fibrous materials.
DURHAM, WILLIAM - - -	2693	3rd. Nov. 1860	Preparing materials for the manufacture of paper.
DURRANT, JAMES - - -	3018	8th Dec. 1860	Chimney pots or apparatus for the tops of chimneys.
DUSAUTOY, AUGUSTE FRANÇOIS	1637	6th July 1860	Machinery or apparatus for pressing and ironing, applicable to clothing, bookbinding, and other purposes. (Patented by Edward Thomas Hughes.)
DUSAUTOY, CHARLES - - -	873	5th April 1860	Apparatus used in the manufacture of paper.
DUSSILLOL, ——— - - -	235	30th Jan. 1860	Apparatus for preparing and clarifying resinous substances. (Patented by Jozé Luis.)
DÜSTERWALD, JOSEPH PIERRE	2230	14th Sept. 1860	An improved forcing pump for raising beer and other liquids.
DUTTON, EDWARD KENWORTHY	2590	24th Oct. 1860	Machinery or apparatus for singeing textile goods or fabrics.
DUVAL, ADELE - - - -	2633	27th Oct. 1860	Improvements in corsets and their fastenings, which are also applicable to other articles of dress. (Patented by William Clark.)
DUVAL, CELESTE - - - -	23	4th Jan. 1860	An improved fertilizing compound for agricultural purposes. (Patented by Marc Antoine François Mennons.)
DUVERGÉ, JEAN BAPTISTE [FRÉDÉRIC.]	2178	8th Sept. 1860	Improved machinery or apparatus for horizontal, vertical, or inclined boring.
DUVOIR, NARCISSE - - -	1429	11th June 1860	Governors or regulators for steam-engines. (Patented by John Henry Johnson.)
DWYER, EDMUND KEOGH -	2630	27th Oct. 1860	Machinery for doubling, creasing, and folding cloth.
DYER, JOHN, junior.	989	20th April 1860	A new or improved process for the ornamentation of certain articles of bed-room furniture.

[Ead]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Edw]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
<b>E.</b>			
EADES, WILLIAM - - -	2536	17th Oct. 1860	Screw stocks and dies for cutting or forming metal screws.
EADES, WILLIAM - - -	3195	31st Dec. 1860	An improved screw-wrench.
EAGLETON, J. J. - - -	145	20th Jan. 1860	Manufacture of the dies or draw plates used in drawing wire and tubes, and for other similar purposes. (Patented by Paul Moore and Paul Moore, junior.)
EARLE, HENRY - - -	1928	9th Aug. 1860	Connecting skins or sheets of parchment, vellum, or paper together, and attaching seals to deeds and other instruments.
EARLE, WILLIAM - - -	1928	9th Aug. 1860	Connecting skins or sheets of parchment, vellum, or paper together, and attaching seals to deeds and other instruments.
EARNSHAW, ABEL - - -	361	10th Feb. 1860	Spinning of wool, cotton, flax, alpaca, mohair, and other fibrous substances.
EARNSHAW, JOSEPH - - -	455	20th Feb. 1860	Machinery for forming blocks of wood into shape to be used as soles for boots, shoes, or clogs, or for other purposes.
EASTMAN, WILLIAM PITT -	1508	21st June 1860	Bolts for fastening doors, gates, and windows. (Communicated by Henry Burt.)
EASTWOOD, THOMAS CHARLES	536	27th Feb. 1860	Means or apparatus for preparing and combing wool, cotton, and other fibres.
EATON, ASAHIEL KNOWLTON -	1036	25th April 1860	A mode of manufacturing steel.
EATON, HENRY - - -	1290	24th May 1860	Coke ovens. (Patented by John Paddon and William Louther.)
ECCLES, JOSEPH - - -	567	3rd March 1860	Machinery for the manufacture of bricks, tiles, pipes, and other articles formed of plastic materials.
ECKEL, JORDON - - -	2690	2nd Nov. 1860	An improved press for compressing substances for packing in the form of bales, or for other purposes. (Patented by William Edward Newton.)
EDDINGTON, ALFRED - - -	1933	9th Aug. 1860	Draining-ploughs.
EDDINGTON, ALFRED - - -	3098	17th Dec. 1860	Driving ploughs.
EDDINGTON, WILLIAM, junior -	2595	24th Oct. 1860	Machinery for draining, ploughing, and cultivating land.
EDGE, JOHN WILLIAM - - -	1688	13th July 1860	Rifled fire-arms, guns, and ordnance.
EDGE, JONATHAN - - -	2445	9th Oct. 1860	Steam-engines.
EDGEWORTH, THOMAS FRANCIS	837	31st March 1860	Obtaining light.
EDGEWORTH, THOMAS FRANCIS	983	19th April 1860	Apparatus for heating fluids.
EDNEY, JAMES M. - - -	2095	30th Aug. 1860	Pumps; apparatus for working the same.
EDWARDS, FREDERIC HOWORTH	2999	7th Dec. 1860	Air engines.
EDWARDS, FRDERICK -	1156	10th May 1860	Chimney bars or plates.
EDWARDS, GEORGE - - -	580	2nd March 1860	Caissons and foundations for bridges, piers, and other structures under water.
EDWARDS, JOHN - - -	2062	29th Aug. 1860	Manufacture of buttons.
EDWARDS, THOMAS - - -	930	13th April 1860	Obtaining motive-power.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
EDWARDS, WILLIAM - -	2673	1st Nov. 1860	A self-acting apparatus for regulating and adjusting the pressure of gas and other fluids.
EDWARDS, WILLIAM - -	2701	3rd Nov. 1860	Fire-screens or guards.
EFFERTZ, PETER - - -	201	26th Jan. 1860	Machinery or apparatus for making bricks.
EFFERTZ, PETER - - -	2071	28th Aug. 1860	Improvements in machinery or apparatus for making bricks, tiles, and similar articles, and in apparatus for transporting the same, which improvements are also applicable for the utilizing of turf, peat, coal dust, or similar substances.
EGGLESTON, T. G. - - -	2108	31st Aug. 1860	Compositions for tanning skins and hides of all descriptions. (Patented by William Edward Newton.)
EIDLITZ, LEOPOLD - - -	493	23d Feb. 1860	An improved method of producing documents suitable for bank notes and other instruments of value, in order to prevent forgery thereof. (Patented by Richard Archibald Brooman.)
EIDLITZ, LEOPOLD - - -	893	9th April 1860	Producing printing and other irregular surfaces, by the aid of photography.
EISENSTUCK, JACOB ALBERT -	1132	7th May 1860	Knitting-machinery.
ELKIN, WILLIAM HENRY -	424	16th Feb. 1860	Window frames and sashes.
ELLERCAMP, JAMES McDONALD	2680	2nd Nov. 1860	Improved apparatus for lowering and disengaging ships' boats from their tackles, parts of said apparatus being applicable to the lowering and disengaging of other heavy bodies or merchandise.
ELLIOT, GEORGE - - -	1303	26th May 1860	Weighing coal at the screen; apparatus for the same.
ELLIOTT, CHARLES ALFRED -	2641	29th Oct. 1860	An instrument for indicating the approach of vessels to shoals, rocks, and land.
ELLIOTT, FREDERICK HENRY -	2631	27th Oct. 1860	An improved case for aneroid barometers for marine purposes.
ELLIOTT, FREDERICK HENRY -	2641	29th Oct. 1860	An instrument for indicating the approach of vessels to shoals, rocks, and land.
ELLIS, EDWIN - - -	845	2nd April 1860	Manufacture of fabrics of the description known as bobbin net.
ELLIS, EDWIN - - -	2078	28th Aug. 1860	Apparatus employed in bobbin net or twist lace machines.
ELLIS, EDWIN - - -	2878	23rd Nov. 1860	Machinery for producing looped fabrics.
ELLIS, JOHN - - -	715	19th March 1860	Certain improvements in or applicable to steam-engines.
EMERSON, JAMES EZEKIEL -	644	9th March 1860	An improved mode of attaching tools to handles. (Patented by William Henry Newton.)
EMMERSON, BENJAMIN - -	926	13th April 1860	Looms for weaving.
ENKLAAR, FREDERIK AN- [DRIAAN.	1940	10th Aug. 1860	Implements for cultivating the soil.
ENNIS, GEORGE - - -	2906	26th Nov. 1860	An improved construction of oyster dredger.
ERICSSON, JOHN - - -	2110	31st Aug. 1860	Air engines. (Patented by William Edward Newton.)
ERMEN, GODFREY - - -	131	18th Jan. 1860	Machinery or apparatus for spinning, winding, and doubling cotton and other fibrous materials.
ESCHWEGE, HERMANN - -	829	30th March 1860	Manufacture of gin or Geneva.
ESKELL, ABRAHAM - - -	1732	17th July 1860	Beds or bases for artificial teeth.

[Etc]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Far

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
ETZEL, CARL VON - - -	132	18th Jan. 1860	Permanent way of railways. (Patented by Siegerick Christopher Kreeft.)
EUNSON, JOHN - - -	98	13th Jan. 1860	Refrigerating apparatus. (Communicated by Robert Groat Eunson.)
EUNSON, ROBERT GROAT -	98	13th Jan. 1860	Refrigerating apparatus. (Patented by John Eunson.)
EUSTICE, THOMAS - - -	792	27th March 1860	A new and useful or improved machine for the making and sizing of pulp used in the manufacture of paper. (Patented by Henry Martyn Clarke.)
EVANS, FREDERICK JOHN -	3066	13th Dec. 1860	Manufacture of illuminating gas.
EVANS, GEORGE FREDERICK -	3066	13th Dec. 1860	Manufacture of illuminating gas.
EVANS, HOWELL - - -	211	27th Jan. 1860	Inkstands. (Patented by John Henry Johnson.)
EVANS, JOHN - - -	1550	26th June 1860	Locks.
EVANS, JOHN CAMPBELL -	1561	27th June 1860	Machinery or apparatus for rolling or drawing metals and other substances, partly applicable to the covering of electric telegraph cables, and to the manufacture of wire and other ropes.
EVANS, THOMAS - - -	630	8th March 1860	Certain improvements in the method of and apparatus for supplying and heating air, the same to be used as a motive-power for marine, locomotive, and stationary engines.
EVANS, WALTER - - -	1138	8th May 1860	Machinery for polishing yarns and threads.
EWER, EDWARD - - -	800	28th March 1860	Fountain pens.

## F.

FABER, JOHANN - - -	531	25th Feb. 1860	Ever-pointed pencil cases.
FAIRBAIRN, SIR PETER -	1794	24th July 1860	Construction of self-acting lathes.
FAIRBAIRN, SIR PETER -	2089	29th Aug. 1860	Construction of rollers used in machinery for preparing hemp and flax.
FAIRBAIRN, SIR PETER -	2704	5th Nov. 1860	Improved machinery for heckling flax and hemp.
FALCONET, E. F. - - -	1882	3rd Aug. 1860	A new or improved musical instrument. (Patented by William Edward Newton.)
FALLOWS, THOMAS - - -	2310	22nd Sept. 1860	Fasteners for window sashes.
FANSHAWE, JOHN AMERICUS -	2934	29th Nov. 1860	An improved mode of and apparatus for cooling liquids.
FANSHAWE, JOHN AMERICUS -	2935	29th Nov. 1860	Brushes and other scrubbing and rubbing surfaces.
FANSHAWE, JOHN AMERICUS -	3157	24th Dec. 1860	Manufacture of fabrics with rubbing or friction surfaces.
FARJON, LOUIS ALEXANDRE -	2921	16th Nov. 1860	Joining or connecting together pipes and tubes. (Patented by Richard Archibald Brooman.)
FARJON, LOUIS ALEXANDRE -	2842	20th Nov. 1860	Stoppers for bottles, jars, and other like articles; partly applicable as fastenings. (Patented by Richard Archibald Brooman.)

[Far]

## ALPHABETICAL INDEX OF PATENTEES

[Fer]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
FARLANE, HUGH MAC - -	2832	17th Nov. 1860	Improvements in cameras such as are used by photographers.
FARLANE, THOMAS FORRESTER [M <sup>c</sup> .	245	31st Jan. 1860	Distilling apparatus. (Patented by William Tait.)
FARMER, CHARLES - - -	2948	1st Dec. 1860	New or improved machinery for the manufacture of the hooks used principally as dress fastenings.
FARMER, GEORGE JAMES -	1308	26th May 1860	Machinery for the manufacture of boot heels and tips, coins, medals, tokens, checks, and such like articles.
FARMER, JAMES - - -	809	29th March 1860	Manufacture of cocoa and chocolate.
FARMER, JOHN - - -	2569	22nd Oct. 1860	Manufacture of scarfs, cravats, and similar articles.
FARMER, WILLIAM - - -	2948	1st Dec. 1860	New or improved machinery for the manufacture of the hooks used principally as dress fastenings.
FARRAR, JABEZ BUNTING -	1434	12th June 1860	Machinery or apparatus for spinning and doubling or twisting wool, mohair, alpaca, cotton, silk, flax, or other fibrous substances.
FARRAR, JOSHUA - - -	1434	12th June 1860	Machinery or apparatus for spinning and doubling or twisting wool, mohair, alpaca, cotton, silk, flax or other fibrous substances.
FARBELL, WILLIAM - - -	1342	31st May 1860	Apparatus used in hoisting and lowering as applied to mine shafts.
FARRINGTON, GEORGE HENRY	833	31st March 1860	Manufacture of envelopes.
FAULKNER, GEORGE HENRY -	2130	4th Sept. 1860	Iron bedsteads. (Patented by James John Stevens.)
FAURE, PIERRE - - -	1970	15th Aug. 1860	A centrifugal hydraulic pump.
FAUVE, MADAME LOUISE -	2161	7th Sept. 1860	An improved method of preserving various alimentary substances. (Patented by Charles Stevens.)
FEARNLEY, SAMUEL - - -	116	17th Jan. 1860	Improvements in looms for weaving looped or pile fabrics, some parts of which improvements are applicable to other kinds of looms.
FELL, RICHARD - - -	1497	20th June 1860	An improved vertical paddle wheel.
FELLOWS, LOUIS STRITE -	1827	27th July 1860	Spectacle frames. (Patented by Joseph Olorenshaw.)
FENTON, JAMES - - -	3074	14th Dec. 1860	An improved method of securing the wearing tyres on wheels.
FERGUSON, JAMES - - -	1230	19th May 1860	Improvements in and connected with looms for weaving.
FERGUSON, JOHN - - -	1686	12th July 1860	Machinery or apparatus for sawing or cutting wood into veneers and planks. (Communicated by J. F. C. Wieland.)
FERNIE, EBENEZER WAUGH -	1047	26th April 1860	Improvements in open fire-places and in their flues.
FERRABEE, HENRY - - -	2332	26th Sept. 1860	Apparatus for lighting, heating, ventilating, and cooking by gas; partly applicable to heating apparatuses of other descriptions.
FERRABEE, JAMES - - -	2332	26th Sept. 1860	Apparatus for lighting, heating, ventilating, and cooking by gas; partly applicable to heating apparatuses of other descriptions.

[Fer]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Fin]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
FERRÉ CHARLES THEOPHILE -	2567	20th Oct. 1860	Manufacture of articles of jewellery; apparatus for the same. (Patented by William Clark.)
FERRIER EUGÈNE - - -	83	12th Jan. 1860	A new clock.
FERRY, FRANÇOIS JOSEPH -	164	23rd Jan. 1860	Harnessing horses or other animals to carriages or vehicles.
FERTÉ, FERDINAND JEAN JOU- [BERT DE LA.	149	20th Jan. 1860	Improvements in reproducing photographic and other pictures, engravings, prints, devices, and designs on the surfaces of glass, ceramic, and other substances requiring to be fired to fix the same thereon. (Partly communicated by Henry Garnier.)
FIELD, EDWARD - - -	607	6th March 1860	Manufacture of railway tyres.
FIELD, EDWARD - - -	2213	13th Sept. 1860	A covering for the moustache or hairy parts of the face.
FIELD, JAMES JOHN - - -	2369	1st Oct. 1860	Improvements in condensing the vapours arising from fluids evaporating in closed vessels, which invention is also applicable to the condensation of the vapours of volatile fluids during the process of distillation, and for improvements in apparatus to be employed for the purpose.
FIELD, WILLIAM - - -	1987	14th Aug. 1860	Permanent way of railways.
FIELDEN, ABRAHAM - - -	1229	19th May 1860	Self acting mules for spinning.
FIELDEN, ROBERT, junior -	286	3rd Feb. 1860	An improvement or improvements in machinery for cutting hides or skins into fillets, strips, or shreds, and also in the manufacture of pickers to be used in looms for weaving, and apparatus connected therewith.
FIELDEN, SAMUEL - - -	1229	19th May 1860	Self acting mules for spinning.
FIELDEN, THOMAS - - -	286	3rd Feb. 1860	An improvement or improvements in machinery for cutting hides or skins into fillets, strips, or shreds, and also in the manufacture of pickers to be used in looms for weaving, and apparatus connected therewith.
FIELDING, JAMES - - -	1919	8th Aug. 1860	Looms for weaving.
FIGGE, AUGUSTUS - - -	1479	18th June 1860	Manufacture of yeast.
FILLIETTE, ADOLPHE JOSEPH	3021	10th Dec. 1860	Presses for copying, stamping, and embossing.
FILOPANTI, QUIRICUS - - -	439	17th Feb. 1860	An apparatus for storing up the motive-power of cheap or costless forces, and carrying their useful effects where no such cheap or costless moving powers could be applied.
FINCH, BENJAMIN - - -	1297	25th May 1860	An improvement in the arrangement of the rudders of ships and vessels.
FINCH, EDWARD - - -	727	20th March 1860	Constructing railway switches and crossings.
FINLAY, ROBERT FREDERICK -	169	23rd Jan. 1860	A new method of reefing and furling the sails of ships and vessels from the decks thereof.
FINN, THOMAS - - -	2121	3rd Sept. 1860	Construction of apparatus for the preservation of life from drowning; preparation of the material employed for this purpose, and for rendering articles buoyant in water.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
FIRMIN, CORNELIUS - -	1444	12th June 1860	Manufacture of sacking; apparatus for the same.
FIRMIN, GEORGE - - -	1444	12th June 1860	Manufacture of sacking; apparatus for the same.
FIRMIN, GEORGE JORDAN -	1548	26th June 1860	Furnaces and fireplaces.
FIRNSTAHL, IGNACE MICHEL -	2201	20th Sept. 1860	Machinery for printing shawls and other fabrics. (Patented by Richard Archibald Brooman.)
FISHER, EDWARD - - -	941	14th April 1860	Steam-engines.
FISHER, JOHN - - -	34	5th Jan. 1860	Machinery or apparatus for washing, cleansing, or purifying clothes and other articles.
FISHER, JOHN - - -	2119	1st Sept. 1860	Oven grates and kitchen ranges.
FISHER, JOHN - - -	2304	21st Sept. 1860	Machinery or apparatus for treating clothes and other articles whilst in a wet condition for the purpose of drying or partially drying the same.
FISHER, JOHN MARTYN - -	1148	9th May 1860	Chimney tops or cowls.
FISHER, JOSEPH - - -	2119	1st Sept. 1860	Oven grates and kitchen ranges.
FISHER, THOMAS - - -	941	14th April 1860	Steam-engines.
FITTÈRE, JEAN PIERRE - -	2748	8th Nov. 1860	Portable sawing machines.
FITTON, EDWARD GERRARD -	2552	19th Oct. 1860	Machinery used in boring, turning, and cutting metals and other substances; partly applicable for driving other machinery.
FITTON, FREDERICK ALEX- [ANDER.	2552	19th Oct. 1860	Machinery used in boring, turning, and cutting metals and other substances; partly applicable for driving other machinery.
FITZGERALD, DESMOND GE- [RALD.	954	16th April 1860	An improved method of igniting the charge in ordnance and other fire-arms.
FITZGERALD, DESMOND GE- [RALD.	2465	10th Oct. 1860	Breech loading fire-arms.
FITZGERALD, WILLIAM - -	273	2nd Feb. 1860	Production of bands or strips for application on petticoats and similar ornamental purposes.
FLEEMING, JAMES, junior -	2042	24th Aug. 1860	Washing, cleansing, and preparing textile fabrics and materials; machinery or apparatus employed therein.
FLEET, BENJAMIN - - -	2819	16th Nov. 1860	Apparatus for cutting and rounding wood.
FLETCHER, GEORGE - - -	1374	5th June 1860	Apparatus for regulating the draft in the tubes of multitubular boilers. (Communicated by Donald Skekel and Alexander Skekel.)
FLETCHER, JAMES - - -	1728	17th July 1860	Machinery or apparatus for regulating the supply and discharge of fluids to steam-boilers, pipes and other vessels, and for cleansing or cleaning the same.
FLETCHER, JOHN - - -	1554	26th June 1860	Apparatus for treating saccharine and saline solutions.
FLETCHER, LAVINGTON EVANS	1338	31st May 1860	Steam-engines and boilers and their appurtenances.
FLETCHER, WILLIAM HENRY -	1562	28th June 1860	Improvements in the form and arrangement of stoves for heating irons used for dressing and polishing shirts, collars, and similar articles, and also in the figure or form of the said irons.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
FLEY, HENRY - - -	2406	4th Oct. 1860	Signal lamps.
FLOIRE, LOUIS ALEXANDRE -	1089	27th April 1860	An improved electric break.
FLOUNDERS, CHARLES FON- [TAYNE.]	1922	8th Aug. 1860	Duplicating photographic impressions; certain machinery for the same.
FOBES, ALPHEUS - - -	670	14th March 1860	Cleaning rice; machinery or apparatus employed therein. (Patented by John Henry Johnson.)
FONROBERT, CHARLES FRAN- [COIN JULES.]	530	25th Feb. 1860	Gilding and silvering silk and other fibrous substances. (Communicated by Mrs. Müller.)
FONTENAU, FELIX - - -	937	14th April 1860	An apparatus for the preservation of life and property in cases of shipwreck.
FONTENAY, ANSELME LOUIS [MARIE DE.]	2165	7th Sept. 1860	Manufacture of cast steel and the remanufacture of old steel. (Patented by Charles Cowper.)
FONTENAY, TONI - - -	1419	9th June 1860	Smoke-consuming furnaces. (Patented by Charles Sterens.)
FONTENAY, TONI - - -	2942	30th Nov. 1860	Smoke-consuming furnaces. (Patented by Charles Sterens.)
FONROBERT, SIMON - - -	2453	9th Oct. 1860	Lustreing, stretching, and finishing silks and other yarns or threads. (Patented by Richard Hands and Richard Medwin Hands.)
FORBES, GEORGE FEDDIS -	1649	9th July 1860	Machinery or apparatus for cleaning cotton.
FORBES, HUGO FRÉDÉRIC -	957	16th April 1860	Improvements in breech loading fire-arms and in projectiles, as also in apparatus for reducing ordinary guns to condition suitable for such improvements in fire-arms, which apparatus is also applicable for other purposes. (Patented by William Clark.)
FORD, HENRY - - -	2835	19th Nov. 1860	Coating or enamelling paper, pasteboard, cardboard, cloth, silk, or other similar fabrics.
FORD, HENRY WILLIAM -	1855	31st July 1860	Elastic buffing and drawing apparatus suitable for railway vehicles.
FORD, JOHN WILLIAM - -	1028	24th April 1860	Driving gear of pumps. (Communicated by Charles W. Clements.)
FORD, RICHARD ADAMS - -	3036	11th Dec. 1860	An improved shirt.
FORD, WILLIAM - - -	1869	2nd Aug. 1860	Sewing-machines.
FORGE, SAMUEL LA - - -	1708	14th July 1860	An improved manufacture of waterproof leather. (Patented by William Edward Newton.)
FORGIE, WILLIAM - - -	2121	3rd Sept. 1860	Construction of apparatus for the preservation of life from drowning; preparation of the material employed for this purpose and for rendering articles buoyant in water.
FORMBY, ROBERT - - -	1558	2 th June 1860	Improved apparatus for applying water power to the working of ships' pumps and winches, and to other useful purposes.
FORSTER, WILLIAM CHARLTON	2764	10th Nov. 1860	An improved method of manufacturing soluble silicate of potash.
FOSSARD, JOACHIM ETIENNE [DANIEL.]	3120	19th Dec. 1860	Irons for ironing. (Patented by Richard Archibald Brooman.)
FOSSEY, EDOUARD FRANÇOIS -	223	28th Jan. 1860	Blowing-engines. (Patented by John Henry Johnson.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
FOURDRINIER, JOSEPH - -	2179	8th Sept. 1860	Kilns for drying grain, seeds and other agricultural produce.
FOURMEAUX, EDOUARD - -	2163	7th Sept. 1860	Improved bags to be used in the manufacture of sugar. (Patented by Charles Stevens.)
FOURNIER, AMÉDIE BENOIT -	3125	20th Dec. 1860	Preventing accidents on railways.
FOWLER, DE GRASSE - -	1810	25th July 1860	Machinery for manufacturing pins.
FOWLER, JOHN - - -	43	6th Jan. 1860	Locks for doors and other purposes. (Communicated by Warren Rowell.)
FOWLER, JOHN - - -	2911	27th Nov. 1860	Boots, shoes, gaiters, leggings, and overshoes.
FOWLER, JOHN, junior - -	974	18th April 1860	Improvements in tilling land and in actuating agricultural implements by steam power, and in apparatus employed therein. (Partly communicated by Messieurs Schubart and Hesse.)
FOWLER, JOHN, junior - -	2889	24th Nov. 1860	Apparatus for raising, lowering, and hauling weights.
FOWLER, THADDEUS - - -	1810	25th July 1860	Machinery for manufacturing pins.
FOX, DANIEL - - -	1993	17th Aug. 1860	Machinery or apparatus for making paper.
FOX, SAMUEL - - -	2741	7th Nov. 1860	Furnaces used in melting steel and other metals when crucibles or pots are employed.
FOX, SAMUEL MICKLE - -	2890	24th Nov. 1860	Rails for railways, wheels of carriages to run thereon, especially adapted to street railways.
FOXALL, THOMAS - - -	3005	7th Dec. 1860	An improved canteen or case for containing refreshments for soldiers or travellers.
FOXWELL, DANIEL - - -	2000	18th Aug. 1860	Sewing-machines.
FRANKAU, SIDNEY - - -	87	12th Jan. 1860	Pipes for smoking.
FRANKAU, SIDNEY - - -	2522	16th Oct. 1860	Plugs for smoking-pipes.
FRANQUINET, EUGENE - -	1665	11th July 1860	Machinery or apparatus for rolling iron.
FREMONT, MARIE MACE -	350	9th Feb. 1860	Scouring wool; machinery or apparatus employed therein. (Patented by Edward Thomas Hughes.)
FREPPÉ, FREDERIC ANTOINE [NICOLAS.]	2202	12th Sept. 1860	An improved preservative and sizing compound for sizing cotton, wool, linen, or other yarns for weaving, and for dressing textile fabrics.
FRTZ, JOHN - - -	690	15th March 1860	Machinery or apparatus for rolling railroad rails, bars, beams, and other such articles. (Patented by Bernard Lauth.)
FROGGATT, JOHN, junior -	2716	6th Nov. 1860	Apparatus for burning gas.
FROMONT, L. M. H. - -	2192	11th Sept. 1860	An improved apparatus for sealing letters and other documents. (Patented by Marc Antoine François Mennons.)
FROMONT, PHILIPPE - -	1439	12th June 1860	Machinery for the ascending and descending in pits or mines of workmen, waggons, carriages, and materials.
FROST, HERBERT - - -	573	1st March 1860	Apparatus for measuring water and other liquids.
FRY, JAMES - - -	2938	30th Nov. 1860	Arrangement and construction of mills for crushing and grinding grain, seeds, oil-cake, and like matters, the crushing principle being also applicable to cements, minerals, and ores.

Fry]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Gar

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
FRY, THOMAS - - -	606	5th March 1860	Window sashes. (Patented by William Edward Newton.)
FRY, THOMAS - - -	929	13th April 1860	Castors for chairs and other like articles of furniture.
FRYATT, HORATIO N. - -	1807	25th July 1860	Process of concentrating and crystallizing sugar. (Patented by Alfred Vincent Newton.)
FRYER, ALFRED - - -	1981	15th Aug. 1860	Centrifugal machines.
FUGGLE, JAMES LANSDALL -	2569	22nd Oct. 1860	Manufacture of scarfs, cravats, and similar articles.
FULLER, JOHN HOBSON - -	869	5th April 1860	An apparatus for cutting or screwing pipes and round metal.
FULLER, JOHN WALLACE -	1026	24th April 1860	An improved method of fitting dead-eye-chain and preventer plates to ships.
FUNK, CHARLES - - -	2807	15th Nov. 1860	An improvement in the manufacture and in the welding of steel and wrought and cast iron. (Patented by Richard Archibald Brooman.)
FURNIVAL, RICHARD - -	2789	14th Nov. 1860	Machinery or apparatus for cutting paper, textile fabrics, and other articles or materials.

## G.

GÎCHE, VINCENT, senior -	1772	21st July 1860	Construction and arrangement of marine steam-engines. (Patented by Marc Antoine François Mençons.)
GAGE, GEORGE - - -	1977	15th Aug. 1860	Improvements in the colouring and manufacture of straw plaits.
GALLAGHER, MAHLON J. -	3183	28th Dec. 1860	Breech-loading fire-arms. (Patented by Alfred Vincent Newton.)
GALLEGOS, JOSÉ - - -	675	14th March 1860	Construction of artificial hands, feet, and limbs, or substitutes for natural hands, feet, and limbs, and parts thereof. (Patented by Michael Henry.)
GALLIBOUR, JEAN CLAUDE [CHARLES.]	1298	22nd May 1860	An improved mode of suspending gas-lights. (Patented by Michael Henry.)
GALLOWAY, JOHN - - -	2960	3rd Dec. 1860	Steam-boilers.
GALLOWAY, WILLIAM - -	2960	3rd Dec. 1860	Steam-boilers.
GALVAIRE, PHILIPPE JOSEPH	648	10th March 1860	An improved mechanical damask loom. (Patented by José Luis.)
GAMBLE, THOMAS - - -	845	2nd April 1860	Manufacture of fabrics of the description known as bobbin net.
GAMBLE, THOMAS - - -	2878	23rd Nov. 1860	Machinery for producing looped fabrics.
GAMMON, CHARLES - - -	27	4th Jan. 1860	An improved churn.
GANNE, LOUIS JULES - -	854	3rd April 1860	Construction and working of thrashing-machines. (Patented by William Edward Gedge.)
GARDINER, ROBERT - - -	1468	16th June 1860	Reaping and mowing machines.

[Gar]

## ALPHABETICAL INDEX OF PATENTEES

[Gav]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
GARDNER, DAVID - -	2936	29th Nov. 1860	Looms for weaving ribbons and other fabrics.
GARDNER, EDWARD - -	724	20th March 1860	Apparatus for the manufacture of paper.
GARDNER, EDWARD - -	2442	8th Oct. 1860	Machinery or apparatus employed in the manufacture of paper.
GARDNER, JAMES - -	1108	2nd May 1860	Metallic bedsteads.
GARDNER, PETER - -	2381	2nd Oct. 1860	Knives for reaping-machines.
GARDRAT, PIERRE ARISTIDE -	901	11th April 1860	Cleaning of the waste of wool, silks, cottons, and flax.
GARGAN, ——— - -	1670	11th July 1860	Improved apparatus for supplying steam-boilers with water. (Patented by George Davies.)
GARNETT, JOHN - -	52	7th Jan. 1860	Writing-desks; apparatus connected therewith.
GARNETT, JOHN - -	1998	17th Aug. 1860	Writing-desks; apparatus connected therewith.
GARNETT, THOMAS - -	2596	24th Oct. 1860	Looms for weaving.
GARNIER, HENRY - -	149	20th Jan. 1860	Improvements in reproducing photographic and other pictures, engravings, prints, devices, and designs on the surfaces of glass, ceramic and other substances requiring to be fired to fix the same thereon. (Patented by Ferdinand Jean Joubert De la Ferté.)
GARSIDE, DAN - -	2642	29th Oct. 1860	A certain compound or certain compounds to be used as a substitute for gunpowder.
GARSTANG, JOHN - -	894	10th April 1860	Looms for weaving.
GARTSIDE, HORATIO NELSON -	2592	24th Oct. 1860	Self acting mules for spinning and doubling.
GASKILL, EDWIN - -	2319	24th Sept. 1860	Application of a travelling set off sheet to gripper printing machines of all kinds.
GATELLIER, EMILE LOUIS -	171	24th Jan. 1860	Manufacture of the crucibles, muffles, or pots used for the reduction of the ores of zinc.
GATWOOD, EDWARD - -	1022	24th April 1860	Fixing and securing the rails in cast iron or other chairs at joints and intermediate places in permanent ways.
GATWOOD, EDWARD - -	1537	23rd June 1860	Improvements in making wheels applicable to railway carriages and locomotive engines.
GAUDET, ——— - -	2347	27th Sept. 1860	Improvements in forging and rolling metals applicable to the manufacture of wheels, spades, shovels, axles, buffers and other articles of wrought iron. (Patented by John Henry Johnson.)
GAULEY, JAMES WILLIAM M <sup>c</sup>	3115	19th Dec. 1860	Means or apparatus for preventing collisions on railways.
GAULTON, WILLIAM PEEL -	2625	27th Oct. 1860	Apparatus for heating the feed water for steam-boilers by the exhaust steam from high pressure engines.
GAVIOLI, CLAUDIO - -	2778	13th Nov. 1860	Construction of organ pipes. (Patented by Marc Antoine François Mennons.)
GAVIOLI, LODOVICO - -	2776	13th Nov. 1860	Improvements in the motive mechanism of cabinet organs and other cylinder musical instruments of that class. (Patented by Marc Antoine François Mennons.)

[Ged]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Ged]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
GEDGE, JOHN - - -	278	3rd Feb. 1860	Amalgamating metals or producing alloys. (Communicated by Johann Aich.)
GEDGE, WILLIAM EDWARD -	156	21st Jan. 1860	Retorts for the distillation of bituminous schists. (Communicated by Jacques Antoine Gossol.)
GEDGE, WILLIAM EDWARD -	157	21st Jan. 1860	Improved props for supporting plants. (Communicated by Lambert Grès.)
GEDGE, WILLIAM EDWARD -	592	3rd March 1860	A liquid or novel preparation to be applied to wools. (Communicated by Jules Juhel Desmases.)
GEDGE, WILLIAM EDWARD -	610	6th March 1860	An improved machine for drying fecula. (Communicated by Michel Antoine François Thibaud de Méonville.)
GEDGE, WILLIAM EDWARD -	611	6th March 1860	Improved machinery or apparatus for washing fecula. (Communicated by Michel Antoine François Thibaud de Méonville.)
GEDGE, WILLIAM EDWARD -	612	6th March 1860	Lathes. (Communicated by Frédéric Gustave Pierret Delouette.)
GEDGE, WILLIAM EDWARD -	613	6th March 1860	Manufacture of lasts and boot trees. (Communicated by Auguste Nicolas Jacquier.)
GEDGE, WILLIAM EDWARD -	666	13th March 1860	Apparatus for washing or dressing ores and analogous substances. (Communicated by A. Dufournel.)
GEDGE, WILLIAM EDWARD -	854	3rd April 1860	Construction and working of thrashing machines. (Communicated by Louis Jules Ganne.)
GEDGE, WILLIAM EDWARD -	1103	2nd May 1860	Manufacture of bolts. (Communicated by Alexandre Joseph and Jean Rény Maré.)
GEDGE, WILLIAM EDWARD -	1104	2nd May 1860	An improved apparatus for obtaining pneumatic power. (Communicated by Jean Baptiste Tissierant.)
GEDGE, WILLIAM EDWARD -	1153	10th May 1860	Breach loading fire-arms. (Communicated by Joseph Humbertjean and Charles Matthey.)
GEDGE, WILLIAM EDWARD -	1367	4th June 1860	Improved machinery or apparatus for manuring land. (Communicated by Jean Eugène Pellier.)
GEDGE, WILLIAM EDWARD -	1422	9th June 1860	Improved apparatus for separately collecting the divers metals of which mineral ores and their gangues are composed. (Communicated by Randal Cresswell.)
GEDGE, WILLIAM EDWARD -	1519	22nd June 1860	Saddlery and harness. (Communicated by Auguste Duchène.)
GEDGE, WILLIAM EDWARD -	1520	22nd June 1860	Improvements in blinds called venetian or jalousies. (Communicated by Victor Bellut.)
GEDGE, WILLIAM EDWARD -	1582	30th June 1860	Improved bricks and tiles. (Communicated by Cizi Paul Coutanceau.)
GEDGE, WILLIAM EDWARD -	1595	2nd July 1860	Chairs and other articles of furniture to be used principally at sea. (Communicated by Victor Gille Marie, Joseph Nereu-Derotée, and Arsène Charrier.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
GEDGE, WILLIAM EDWARD -	1891	4th Aug. 1860	An improved cork cutting machine. (Communicated by Barthélemy Belzon.)
GEDGE, WILLIAM EDWARD -	2012	21st Aug. 1860	Apparatus for obtaining motive-power based upon the hydrostatic paradox. (Communicated by Louis Leygonie.)
GEDGE, WILLIAM EDWARD -	2035	24th Aug. 1860	Turbinal hydraulic apparatus. (Communicated by Jean Larger.)
GEDGE, WILLIAM EDWARD -	2140	5th Sept. 1860	Improved cylinders for laminating metals. (Communicated by Eugène Louis Robert.)
GEDGE, WILLIAM EDWARD -	2177	8th Sept. 1860	Improved means of extinguishing conflagrations. (Communicated by Alexandre Lelandais.)
GEDGE, WILLIAM EDWARD -	2231	14th Sept. 1860	Apparatus for goffering felt or cloth hats or other analogous articles. (Communicated by François Munier, fils.)
GEDGE, WILLIAM EDWARD -	2232	14th Sept. 1860	Ornamenting glass with coloured designs or pictures in imitation of stained or painted glass. (Communicated by Jules Bénèche.)
GEDGE, WILLIAM EDWARD -	2246	15th Sept. 1860	Manufacture of manure. (Communicated by Emile Arice.)
GEDGE, WILLIAM EDWARD -	2575	22nd Oct. 1860	Feeding steam-boilers. (Communicated by Charles Delcourt, Pierre Boulicault, and Claude Mauvoil.)
GEE, JOSEPH - - -	860	4th April 1860	Machinery for the manufacture of looped fabrics.
GEEVES, WILLIAM - - -	1226	17th May 1860	Saw-mills.
GÉLIS, AMÉDÉE - - -	1816	26th July 1860	Preparing compounds of cyanogen and principally of prussiates by means of sulphuretted carbamids or amids, which supply sulphurets of carbon by their decomposition.
GENHARDT, HENRY -	2261	19th Sept. 1860	Improved apparatus for charging and closing the ends of cartridges. (Patented by Friederich Wilhelm Julius Zorn.)
GENON, AUGUSTE - - -	1055	26th April 1860	Boring-bits. (Patented by William Clark.)
GENT, GEORGE - - -	1489	20th June 1860	Machinery or apparatus for making gas burners.
GEOGHEGAN, ROBERT - -	1143	9th May 1860	Machinery or apparatus for expressing liquids from various substances.
GEOGHEGAN, ROBERT - -	2331	25th Sept. 1860	Machinery or apparatus for expressing liquids from various substances.
GEORGE, BENJAMIN GEORGE -	3004	7th Dec. 1860	Mounting of tablets or show bills, and also of prints and drawings.
GEORGE, JAMES - - -	433	17th Feb. 1860	A new or improved method of suspending gas and other chandeliers.
GERRANS, WILLIAM - - -	2106	31st Aug. 1860	Horse rakes.
GHISLIN, THOMAS GOULSTON -	2661	31st Oct. 1860	Preparing, applying, and adapting certain articles of vegetable production called Eiklonia-buccinalis, proteaceæ, juncus serratus, juncus trista, and Amaryllidæ to further new purposes of manufacture.
GIBBONS, WILLIAM JOHN -	3153	24th Dec. 1860	Stereoscopes and their cases.
GIBBS, JOSEPH - - -	1677	12th July 1860	Constructing submerged works.



Gib]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Gir

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
GIBSON, GEORGE MARTIN -	2845	29th Oct. 1860	Looms. (Patented by William Eduard Newton.)
GIBSON, JOHN WILLIAM -	1770	21st July 1860	Bridges.
GILBEE, HENRY - - -	2353	28th Sept. 1860	An improved medicament to prevent and cure venereal diseases. (Communicated by Noel Pascal.)
GILBEE, HENRY - - -	2929	29th Nov. 1860	Welding. (Communicated by Michel Helson.)
GILBEE, WILLIAM ARMAND -	351	9th Feb. 1860	Treating saccharine fluids. (Communicated by Edmond Pesier.)
GILBEE, WILLIAM ARMAND -	850	3rd April 1860	An improved apparatus for making signals on railways. (Communicated by Joseph Desgabriel.)
GILBERT, DAVID - - -	2937	30th Nov. 1860	Inlaying marking, and engraving ivory, vegetable ivory wood or horn buttons, or such as are made of similar materials, by a new process.
GILBERT, SAMUEL - - -	492	23rd Feb. 1860	A new machine for excavating sewers, tunnels, and other such like under-ground work.
GILES, GEORGE - - -	2697	3rd Nov. 1860	Construction of omnibuses or other vehicles.
GILES, JOHN - - -	1943	10th Aug. 1860	Steam-engines; steam generators.
GILL, GEORGE - - -	2810	15th Nov. 1860	Improvements in "steam rams" and other "ships of war," for the purpose of doing away with the necessity of employing "rifled cannon" or other "long range ordnance" against armour plated and other ships in maritime engagements.
GILL, JOSEPH - - -	2280	19th Sept. 1860	Generating and applying steam as a motive-power; apparatus employed for these purposes. (Patented by Maurice Sautter.)
GILLARD, JOSEPH PIERRE -	1087	30th April 1860	Apparatus for manufacturing gas for lighting and heating, and for obtaining motive-power.
GILLESPIE, CHARLES - -	787	27th March 1860	Bedsteads. (Communicated by Samuel Gillespie.)
GILLESPIE, JAMES - - -	516	25th Feb. 1860	Reaping and mowing machines.
GILLESPIE, JOHN - - -	516	25th Feb. 1860	Reaping and mowing machines.
GILLESPIE, SAMUEL - -	787	27th March 1860	Bedsteads. (Patented by Charles Gillespie.)
GILLETT, HENRY - - -	2923	28th Nov. 1860	Ornamentation of the edges of the leaves of photographic albums, especially intended for "cartes de visite."
GILLIES, JAMES - - -	2755	8th Nov. 1860	Valves for steam-engines.
GILLIS, PIERRE ADOLPHE -	446	18th Feb. 1860	An improved regulator for prime mover engines.
GILMORE, JOHN - - -	3122	19th Dec. 1860	An improved method of raising water in baths.
GILROY, JAMES - - -	533	27th Feb. 1860	Embossing and finishing woven fabrics.
GIRARD, CHARLES - - -	1300	26th May 1860	A new process for manufacturing red and violet colouring matter
GIRARD, PAUL ADRIEN - -	1377	5th June 1860	A new or improved machinery for manufacturing bricks, tiles, and other ceramic products.
GIRARDET, CHARLES - -	2181	8th Sept. 1860	Carriages and harness for horses; means of attaching harness to carriages.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
GISBORNE, FREDERIC NEWTON	93	13th Jan. 1860	Insulating material for telegraphic purposes.
GISBORNE, JOHN SACHEVERELL	1918	8th Aug. 1860	Apparatus for supporting or carrying electrical conductors for telegraphic communication.
GLADSTONE, THOMAS MURRAY	1140	8th May 1860	Construction and form of anchors.
GLASS, RICHARD ATWOOD -	2991	6th Dec. 1860	A method of and apparatus for preserving electric telegraph cables and wires prior to their being laid.
GLASSON, JOSIAH - -	1568	28th June 1860	An improved method of connecting together the several tubes used in connection with steam-boilers for superheating steam.
GLEDHILL, HENRY - -	2264	18th Sept. 1860	Finishing textile fabrics; means or apparatus employed therein.
GLEN, JOHN - - -	2767	10th Nov. 1860	Machinery, apparatus, or means for engraving or producing printed surfaces.
GLÉNARD, BENOIT MARIE [ALEXANDRE.]	3119	19th Dec. 1860	Improvements in the manufacture of colours applicable for various uses in arts and manufactures. (Patented by Michael Henry.)
GLOAG, HENRY - - -	1723	17th July 1860	Breech-loading fire-arms and cannons.
GLOVER, GEORGE - - -	2826	16th Nov. 1860	Apparatus used in measuring gas.
GLOVER, JAMES - - -	3143	21st Dec. 1860	Mounting and affixing opaque letters or numerals on a translucent ground.
GLOVER, WILLIAM HENRY -	1659	10th July 1860	Water tuyeres.
GOAR, JOHN C. - - -	2143	5th Sept. 1860	Belt shippers. (Patented by William Edward Newton.)
GOBERT, MARIE CÉLINA -	1906	7th Aug. 1860	Pattens or clogs and coverings for the feet. (Patented by William Clark.)
GOBLE, GEORGE FREDERIC -	2508	15th Oct. 1860	Improved machinery for crushing quartz and other substances, and for mechanically and chemically extracting gold from auriferous stones or soils, and for procuring silver, copper, zinc, lead, iron, and other metals from their respective ores or impregnated liquids.
GODDARD, JOSEPH - - -	96	13th Jan. 1860	Preparation and dyeing of yarns or threads.
GODDARD, WILLIAM - - -	628	8th March 1860	Railway chairs.
GODEFROY, PETER AUGUSTIN	1978	15th Aug. 1860	Mode of insulating and laying down inland telegraphic wire.
GOLDEN, CHARLES - - -	2265	18th Sept. 1860	Improvements in breech loading fire-arms and in projectiles.
GOLDIE, JAMES - - -	1263	22nd May 1860	Furnaces; consumption or prevention of smoke.
GOLDIE, THOMAS - - -	716	19th March 1860	Looms for weaving.
GONTARD, CÉLESTIN PHILIPPE	1588	2nd July 1860	Remontoirs for winding up and setting right watches without keys.
GOODWIN, HERBERT - - -	2094	30th Aug. 1860	Stacking earthenware during the process of firing; apparatus used for that purpose.
GORDON, THOMAS - - -	1330	30th May 1860	Improvements in inkstands.
GORRILL, BENJAMIN - - -	2986	5th Dec. 1860	Making of gilding-tools for gilding or embossing ornaments on leather or other surfaces.
GOSSAGE, WILLIAM - - -	392	13th Feb. 1860	Manufacture of certain kinds of soap.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
Gossage, William - -	1086	30th April 1860	Obtaining products by means of distillation and condensation, or by one of such means from oily, fatty, resinous, and bituminous substances.
Gossage, William - -	2330	25th Sept. 1860	Manufacture of certain kinds of soap.
Gossell, Otto John Thec- [Dore.	37	5th Jan. 1860	Construction of locomotive engines. (Communicated by Louis Stössger.)
Gossot, Jacques Antoine -	156	21st Jan. 1860	Retorts for the distillation of bituminous schists. (Patented by William Edward Gedge.)
Goucher, John - - -	1856	31st July 1860	Beaters for thrashing-machines.
Gough, William - - -	1846	30th July 1860	Balancing millstones.
Gouin, Edouard - - -	1165	11th May 1860	Driving or propelling railway rolling stock. (Patented by Richard Archibald Brooman.)
Goulson, Job - - -	124	17th Jan. 1860	Gas meters.
Goulson, Job - - -	1734	17th July 1860	Gas and other fluid meters.
Gourlay, Henry - - -	779	26th March 1860	Steam-engines and boilers.
Goy, André Louis Hyacinthe [De.	3077	14th Dec. 1860	Signalling from one part of a railway train to another. (Patented by William Clark.)
Grafton, Henry - - -	2920	28th Nov. 1860	Application of machinery to the cultivation of land.
Grafton, Henry - - -	2921	28th Nov. 1860	Apparatus or machinery for cultivating land.
Graham, Peter - - -	1681	12th July 1860	Improvements in means or apparatus for operating roller blinds.
Grahame, Thomas - - -	2005	18th Aug. 1860	Improvements in projectiles and cannons or barrels for discharging the same.
Grainger, John - - -	745	22nd March 1860	Breech loading fire-arms.
Grande, — - - -	2400	4th Oct. 1860	An improved machine for applying steam in a manner to cause direct rotation. (Patented by Charles Whicher.)
Granger, Arthur - - -	2459	9th Oct. 1860	A better and cheaper kind of embossing press for embossing or stamping paper, linen and other articles.
Granger, Arthur - - -	3020	10th Dec. 1860	Manufacture of collars, cuffs, shirt fronts, clergymen's bands, stocks, and articles of a like nature.
Granges, Baron Otto Des -	1184	14th May 1860	Iron pavements. (Patented by William Edward Newton.)
Grant, John - - -	1203	16th May 1860	Breakwaters.
Grant, John - - -	1869	2nd Aug. 1860	Breech loading guns.
Grantham, John - - -	1082	28th April 1860	Apparatus for feeding furnaces with coals.
Grantham, John - - -	1084	28th April 1860	Slips for raising ships and vessels.
Grantham, John - - -	1164	11th May 1860	Improvements in the manufacture of wire rope and in machinery for that purpose, with special application to the manufacture of telegraph cables.
Gratrix, Robert Hodgson -	2205	12th Sept. 1860	Dyeing and printing textile materials and fabrics.
Gratrix, Robert Hodgson -	2794	14th Nov. 1860	Obtaining colouring matters for dyeing and printing. (Partly communicated by Matthias Paraf.)
Grattan, Nicholas - - -	1523	22nd June 1860	Gilding steel and other metals.
Gratton, Thomas - - -	7	2nd Jan. 1860	A composition for rendering uninflamable linen, cotton, silk, or other inflammable fabrics and substances.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
GRAY, ALEXANDER - - -	218	28th Jan. 1860	Power-looms.
GRAY, HORACE - - -	1049	26th April 1860	A new mode of preventing incrustation in boilers using sea or calcareous waters. (Patented by James Wright.)
GRAY, THOMAS - - -	142	20th Jan. 1860	Manufacture of goblets and other similar articles in glass; apparatus connected therewith.
GRAY, THOMAS - - -	1739	18th July 1860	Manufacture of flock such as is employed for flocking paper hangings and for other purposes.
GRAYSTON, ELIAS - - -	361	10th Feb. 1860	Spinning of wool, cotton, flax, alpaca, mohair and other fibrous substances.
GRAZIANI, MICHEL ANTOINE	3186	29th Dec. 1860	An improved tissue fabric or structure. (Patented by William Clark.)
GREAVES, HILTON - - -	1848	30th July 1860	Improvements in hecks or mechanism or arrangements used in warping yarns or threads.
GREAVES, HUGH - - -	2010	21st Aug. 1860	Construction of railways, tramways, or tracks for carriages appliances for the conveyance of passengers, parcels, and letters thereby
GREAVES, HUGH - - -	2946	1st Dec. 1860	Improvements in the construction of railways, tramways, and in vehicles to run hereon, portions of which improvements are applicable to other useful purposes.
GREAVES, JOHN WHITEHEAD -	2397	3rd Oct. 1860	Slate dressing machines.
GREEN, ALFRED - - -	1659	10th July 1860	Water tuyeres.
GREEN, CHARLES - - -	1980	15th Aug. 1860	Machinery for manufacturing tubes for tubular steam-boilers.
GREEN, CHARLES - - -	2358	29th Sept. 1860	Manufacture of salt.
GREEN, CHARLES EDMUND -	524	25th Feb. 1860	Breech loading fire-arms.
GREEN, HENRY - - -	1776	23rd July 1860	Charging and drawing the charge from gas retorts; machinery employed in performing such operations.
GREEN, HENRY THOMAS -	1089	30th April 1860	Machinery for the manufacture of plain and ornamented bricks, slabs, tiles, and quarries.
GREEN, JOHN - - -	386	13th Feb. 1860	Machinery or apparatus for drilling and distributing or sowing broad cast lime, salt, soot, guano, and other manures.
GREEN, JOHN - - -	524	25th Feb. 1860	Breech loading fire-arms.
GREEN, JOHN - - -	1255	22nd May 1860	Construction of ploughs, cultivators and similar agricultural implements.
GREEN, JOSEPH - - -	1076	28th April 1860	An improved cutting and sawing machine.
GREEN, THOMAS - - -	422	16th Feb. 1860	An improved machine for the manufacture of paper and other bags. (Communicated by Leon de Parienté.)
GREEN, WILLIAM - - -	455	20th Feb. 1860	Machinery for forming blocks of wood into shape to be used as soles for boots, shoes, or clogs, or for other purposes.
GREEN, WILLIAM - - -	2359	29th Sept. 1860	Refining or treating sugar and molasses.
GREEN, WILLIAM - - -	2714	6th Nov. 1860	Fire-arms, breech-loading.
GREENOUGH, J. J. - - -	1411	8th June 1860	Machinery for the manufacture of barbed and other needles for knitting and sewing. (Patented by George Tomlinson Bougfield.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
GREENOUGH, J. J. - - -	2489	10th Oct. 1860	An eraser and pencil sharpener. (Patented by George Tomlinson Bousfield.)
GREENWAY, CHARLES - - -	1334	30th May 1860	Manufacture of salt; apparatus used therein.
GREENWOOD, BENJAMIN - - -	2972	4th Dec. 1860	Manufacture of brooms and other brushes.
GREENWOOD, JAMES - - -	2189	11th Sept. 1860	Looms for weaving.
GREENWOOD, STEPHEN - - -	2039	24th Aug. 1860	Looms for figure weaving.
GREENWOOD, THOMAS - - -	1352	1st June 1860	Improved machinery for cutting and shaping wood.
GREENWOOD, THOMAS - - -	1958	13th Aug. 1860	Construction of projectiles.
GREENWOOD, THOMAS - - -	2282	19th Sept. 1860	An improved mode of and apparatus for manufacturing files.
GREENWOOD, THOMAS - - -	2643	29th Oct. 1860	Machinery for carding opening and straightening tow and other fibrous substances.
GREIG, DAVID - - -	974	18th April 1860	Improvements in tilling land and in actuating agricultural implements by steam-power, and in apparatus employed therein. (Partly communicated by Messieurs Schurbart and Hesse.)
GREIG, DAVID - - -	2889	24th Nov. 1860	Apparatus for raising, lowering, and hauling weights.
GRÈS, LAMBERT - - -	157	21st Jan. 1860	Improved props for supporting plants. (Patented by William Edward Gedge.)
GREVES, CHARLES - - -	474	22nd Feb. 1860	Fire-arms.
GREW, NATHANIEL - - -	114	17th Jan. 1860	Improved pressure and vacuum gauges for steam, water, gas or other fluids.
GRICE, ——— - - -	2895	26th Nov. 1860	Steam carriages and the running gear for street and other railways. (Patented by George Francis Train.)
GRICE, FREDERIC GROOM - -	190	25th Jan. 1860	Manufacture of nuts for screws; machinery employed in the said manufacture.
GRIFFITH, WILLIAM - - -	141	20th Jan. 1860	Propelling vessels and locomotive carriages.
GRIFFITHS, ROBERT - - -	2976	5th Dec. 1860	Screw propeller blades.
GRIFFITHS, THOMAS - - -	2313	22nd Sept. 1860	A new or improved pulley for window and other blinds.
GRIGNON, AUGUSTE JOSEPH -	3188	29th Dec. 1860	Manufacturing fibrous materials, tissues, or other fabrics.
GRIMALDI, DOCTOR FILIPPO -	1927	9th Aug. 1860	Improvements in the instantaneous generation of steam.
GRIMALDI, PHILIPPE - - -	19	4th Jan. 1860	Improved steam generators not liable to bursting.
GRIMALDI, PHILIPPE - - -	1415	8th June 1860	Steam generators.
GRIMOND, JOSEPH - - -	1124	5th May 1860	Weaving.
GRIMSHAW, O'DONNELL - - -	78	11th Jan. 1860	Improved apparatus for registering the number of impressions given to documents or other articles by hand stamps and stamping or printing presses.
GRIMSHAW, WESTON - - -	1634	6th July 1860	Machinery for compressing brick earth and other materials.
GRIMSHAW, WESTON - - -	2502	15th Oct. 1860	Apparatus for superheating steam in locomotive steam-engines.
GRIMSHAW, WESTON - - -	2562	20th Oct. 1860	Machinery or apparatus for drying, mixing and pulverizing clay and other materials.
GRIMSTON, THOMAS - - -	2128	3rd Sept. 1860	Machinery for balling threads, yarns, or twines made from fibrous materials.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
GRIVEL, ANTOINE, junior -	2648	29th Oct. 1860	Railway break apparatus. (Patented by William Clark.)
GROS, JULES GABRIEL - -	2167	7th Sept. 1860	Manufacture of soap. (Patented by Paul Elias Aubertin.)
GROSSETETE, CHARLES AR- [MAND.	1819	27th July 1860	An improved reversed conical nonswerving spring mattress.
GROUT, GEORGE - - -	2232	17th Sept. 1860	Improved machinery for manufacturing elastic cord.
GROVER, ——— - - -	2886	24th Nov. 1860	Sewing-machines. (Patented by John Henry Johnson.)
GRUMEL, FRANÇOIS REMY -	2022	22nd Aug. 1860	Improvements in the albums of collection of photographic and lithographic proofs engravings, and other drawings.
GRUNDT, HERMANN - -	1986	16th Aug. 1860	Pontoons.
GRUNER, DR. CARL BERN- [HARD.	2818	16th Nov. 1860	Machinery or apparatus for folding and for folding and stitching sheets of paper and other material. (Patented by Rudolph Bodmer.)
GUDIN, THEODORE - -	2279	19th Sept. 1860	Apparatus for manufacturing gas, when dissolving zinc or iron in dilute sulphuric or other acid.
GUERIN, PIERRE - - -	2997	7th Dec. 1860	Improvements in the hydraulic press.
GUERRÉE, TOUSSAINT VICTOR	3171	27th Dec. 1860	An apparatus for moving waggons or carriages on railways.
GUERRIER, JEAN PIERRE [CLAUDE.	210	27th Jan. 1860	Improved apparatus for splitting and preparing the cane for various purposes.
GUFFROY, CHARLES CONSTANT [JOSEPH.	172	24th Jan. 1860	An improved smoke consuming apparatus and also an improved method of introducing the coal or fuel into it.
GUFFROY, CHARLES CONSTANT [JOSEPH.	1764	20th July 1860	Preparing the livers of salt water fish. (Communicated by Augustin Joseph Despinoy.)
GUIBÉ, FRÉDÉRIC - - -	1658	10th July 1860	Construction and arrangement of apparatus for obtaining motive-power from heated compressed air. (Patented by Marc Antoine François Mennons.)
GUICHENÉ, FRANÇOIS - -	3032	10th Dec. 1860	Electric apparatus for striking the hours on bells. (Patented by John Henry Johnson.)
GUIGNES, JEAN BAPTISTE -	1174	12th May 1860	An improved machine for raising water. (Patented by Charles Stevens.)
GUIGNES, JEAN BAPTISTE -	2759	19th Nov. 1860	An improved machine for raising water. (Patented by Charles Stevens.)
GUIGON, J. C. - - -	2345	27th Sept. 1860	Improved processes for dyeing or printing with certain products of aniline on cotton and other textile matters of vegetable origin. (Patented by Marc Antoine François Mennons.)
GUILLAUME, PIERRE - -	2965	3rd Dec. 1860	Valves for closets and other receptacles. (Patented by Richard Archibald Brooman.)
GUILLEMIN, CLAUDE MARIE -	1209	16th May 1860	Submarine electric telegraphs.
GUILLEMONT, LOUIS AUGUSTIN	1054	26th April 1860	Lamps. (Patented by Richard Archibald Brooman.)
GULLICK, THOMAS - - -	1320	29th May 1860	An improved spur box.
GYTON, JOHN BENSTEAD -	2723	6th Nov. 1860	Paddle wheels.



Haa]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Hal

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
<b>H.</b>			
HAAS, ALBERT FREDERICK -	1868	2nd Aug. 1860	Dolls. (Communicated by Fischer Naumann & Co.)
HABEL, EDWARD - - -	2541	18th Oct. 1860	Steam-engines.
HACKER, HENRY GEORGE -	944	14th April 1860	Machinery for the manufacture of chenille.
HACKER, HENRY GEORGE -	2014	21st Aug. 1860	Machinery for the manufacture of chenille.
HADDAN, JOHN COOPE - -	384	13th Feb. 1860	Manufacture of guns and of projectiles to be used therewith.
HADDAN, JOHN COOPE - -	658	10th March 1860	Manufacture of projectiles and of cannon for discharging the same.
HADDAN, JOHN COOPE - -	1872	2nd Aug. 1860	Manufacture of rifled cannon and of projectiles to be discharged from rifled cannon.
HADDAN, JOHN COOPE - -	2998	7th Dec. 1860	Improvements in the manufacture of cannon and of projectiles, part of which improvements is applicable to casting metal.
HADFIELD, CHARLES - - -	1391	6th June 1860	Machinery for preparing, making, and moulding bricks, tiles, and other articles formed of clay, peat, or other materials.
HADFIELD, GEORGE - - -	1382	5th June 1860	Manufacture of casks or barrels; machinery to be used therein.
HADFIELD, GEORGE - - -	3129	20th Dec. 1860	Preparation of wood for conversion into casks or barrels; machinery to be used for that purpose.
HADWEN, JOHN WILSON - -	925	13th April 1860	Machinery or apparatus for combing or cleaning silk, cotton, wool, and other fibrous substances.
HADWEN, JOHN WILSON - -	2892	26th Nov. 1860	Treatment of silk waste, waste silk, or silken fibre; manufacture of yarns and tissues from the same whether alone or in admixture with other materials.
HÄHNEL, CHARLES WENZEL -	1757	20th July 1860	Construction of parts of umbrellas and parasols. (Communicated by Louis Prang.)
HAIGH, JONATHAN - - -	138	19th Jan. 1860	Machinery to be used in finishing cloths or fabrics having nap or pile on their surfaces.
HAINES, MICHAEL JOHN - -	408	14th Feb. 1860	Manufacture of driving straps.
HAINES, MICHAEL JOHN - -	2078	28th Aug. 1860	Manufacture of driving straps.
HALE, THOMAS - - -	2879	23rd Nov. 1860	Construction and internal arrangement of furnaces; preparation, manufacture, and treatment of clays and bricks and other articles made of clay, earthenware or stone used for the above and other structures.
HALE, WARREN STORMES - -	591	3rd March 1860	An improved candle lamp.
HALE, WILLIAM - - -	1578	29th June 1860	Impelling shells or shots; apparatus for directing their flight from ships or vessels, which apparatus is applicable to guns or mortars used on board ship for preventing them being acted upon by the pitching or rolling of the ship or vessel.
HALL, COLLINSON - - -	327	7th Feb. 1860	Steam tilling machinery and apparatuses.
HALL, EDWARD - - -	2015	21st Aug. 1860	Machinery for grinding and smoothing glass.
HALL, EDWARD - - -	2744	7th Nov. 1860	Slide valves for steam-engines.
HALL, GEORGE, junior - -	1920	8th Aug. 1860	Improvements in the form and construction of reaping-machines.

[Hal]

## ALPHABETICAL INDEX OF PATENTEES

[Han

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
HALL, HENRY - - -	3046	12th Dec. 1860	Machinery or apparatus for spinning and doubling fibrous materials.
HALL, HIRAM LYMAN - -	883	9th April 1860	Manufacture of india-rubber cloth, japanned and leather cloths; machinery or apparatus employed therein.
HALL, JOHN - - - -	283	3rd Feb. 1860	Sewing-machines.
HALL, JOHN - - - -	1876	3rd Aug. 1860	Sewing-machines.
HALL, NATHANIEL RICHARD -	2234	14th Sept. 1860	Improved apparatus for winding up clocks or timekeepers.
HALL, WILLIAM KEMBLE -	1666	11th July 1860	Gas regulators. (Communicated by Calvin T. Herring.)
HALLETT, GEORGE - - -	2984	5th Dec. 1860	Coating iron and other ships' bottoms and other surfaces.
HALTER, ANTOINE - - -	2038	24th Aug. 1860	Manufacture of flexible tubes for the conveyance of water, illuminating gas or other fluids.
HAMER, JOB - - - -	886	9th April 1860	An improved manufacture of rugs, quilts, coverlets or covers for beds, and of certain articles of wearing-apparel.
HAMERTON, JOSEPH - - -	3037	11th Dec. 1860	Manufacturing certain textile fabrics known as "zebra cloth" or triple cloth.
HAMILTON, FRANCIS - - -	3096	17th Dec. 1860	Machinery for carding cotton and other fibrous substances.
HAMILTON, GEORGE - - -	2685	2nd Nov. 1860	Locks.
HAMILTON, JOHN - - -	418	15th Feb. 1860	Marine steam-engines.
HAMILTON, JOHN - - -	527	25th Feb. 1860	Apparatus for governing or regulating the speed of steam and other engines and machines in motion.
HAMILTON, JOHN - - -	1345	31st May 1860	Bobbins or holders for textile materials.
HAMILTON, JOHN - - -	2900	26th Nov. 1860	Bobbins or holders for textile materials.
HAMILTON, JOHN, junior -	817	29th March 1860	Constructing and propelling vessels.
HAMILTON, JOHN, junior -	1837	28th July 1860	Vessels to be propelled by steam power.
HAMILTON, JOHN, junior -	2166	7th Sept. 1860	Sockets for receiving the lower parts of the posts or uprights employed in constructing electric telegraphs.
HAMILTON, JOHN, junior -	2843	20th Nov. 1860	Tubular wrought iron telegraph posts.
HAMOIR, GUSTAVE - - -	585	2nd March 1860	Construction of naves or bosses for wheels. (Patented by Richard Archibald Brooman.)
HAMOIR, GUSTAVE - - -	1526	22nd June 1860	Horse rakes. (Patented by Richard Archibald Brooman.)
HAMY, LOUIS - - - -	2439	8th Oct. 1860	Cleaning or separating gutta-percha from extraneous matters; apparatus for the same. (Patented by William Clark.)
HAMY, LOUIS - - - -	2440	8th Oct. 1860	Driving straps and bands. (Patented by William Clark.)
HANCOCK, CHARLES LAMB -	3110	18th Dec. 1860	An improved fuel.
HANCOCK, JAMES LAMB -	798	28th March 1860	An improved apparatus for working and shaping butter, and for separating it from the butter milk.
HANDS, RICHARD - - -	2453	9th Oct. 1860	Lustreing, stretching, and finishing silks and other yarns or threads. (Communicated by Simon Fontrobert.)
HANDS, RICHARD MEDWIN -	2417	6th Oct. 1860	Dressing or giving lustre to silks, ribbons, and other fabrics, also to threads and yarns.

[Han]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Har

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
HANDS, RICHARD MEDWIN -	2453	9th Oct. 1860	Lustreing, stretching, and finishing silks and other yarns or threads. (Communicated by Simon Fontrobort.)
HANNAY, PETER - - -	2544	18th Oct. 1860	Improved machinery for crushing quartz and other substances. (Patented by Alfred Vincent Newton.)
HANON, ETIENNE JOSEPH -	2479	11th Oct. 1860	Manufacture of vegetable albumine.
HANSEMAN, GUSTAV. - -	983	17th April 1860	Machinery for spinning yarns.
HANSOR, JAMES - - -	2353	17th Sept. 1860	Manufacture of coal gas.
HARBEN, BENJAMIN - -	982	19th April 1860	A substitute for ordinary butter, especially adapted for the use of pastry cooks, biscuit bakers, and general culinary purposes.
HARDING, GUSTAVUS PALMER	262	1st Feb. 1860	Hats and similar coverings for the head.
HARDING, HORACE WELCH -	2498	13th Oct. 1860	An improved combined sandwich-case and drinking flask.
HARDING, WILLIAM - - -	762	23rd March 1860	Breech loading fire-arms. (Partly communicated by Captain Alexandre Delvigne.)
HARDING, WILLIAM - - -	1464	15th June 1860	Breech loading fire-arms.
HARDON, EDWIN - - -	1122	5th May 1860	Finishing woven fabrics.
HARDY, THOMAS - - -	8	3rd Jan. 1860	An improved tool for cleaning the inside of the tubes or flues of tubular steam-boilers.
HARFIELD, WILLIAM HORATIO	1347	31st May 1860	Improvements in capstans and windlasses, and in shackling-chains.
HARGREAVES, BENJAMIN -	554	29th Feb. 1860	Looms for weaving.
HARGREAVES, STEPHEN -	2118	1st Sept 1860	An improved warping machine.
HARGREAVES, WALMSLEY -	2335	26th Sept. 1860	Machinery or apparatus for washing woven fabrics.
HARLAND, EDWARD JAMES -	46	6th Jan. 1860	Constructing and covering the decks of ships and other floating bodies.
HARPER, JAMES - - -	281	3rd Feb. 1860	Roving-frames.
HARRATT, CHARLES - - -	2676	1st Nov. 1860	Machinery used in giving motion to a shaft or axis used in propelling vessels, ploughs, and machinery.
HARRELL, RICHARD - - -	1890	4th Aug. 1860	"Temples" used in weaving textile fabrics.
HARRINGTON, ROBERT - -	1584	30th June 1860	Manufacture of runner notches and top notches for umbrellas and parasols.
HARRINGTON, TIMOTHY - -	178	24th Jan. 1860	Steam-engines and boilers.
HARRIS, GEORGE STEPHENS -	1614	4th July 1860	Apparatus for rapidly cooling or refrigerating water, wine, beer, or other liquids.
HARRIS, JOHN - - -	1254	22nd May 1860	A new method of constructing and forming boxes or cases for containing and enclosing different articles, more especially during their transmission by post or other conveyance.
HARRIS, JOSIAH - - -	1133	7th May 1860	Manufacture of coke and charcoal from lignite, and obtaining products therefrom.
HARRIS, JOSIAH - - -	2627	27th Oct. 1860	Moveable armour for protecting ships of war and batteries from the effects of shot and shell.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
HARRIS, WILLIAM ANDREW -	2007	20th Aug. 1860	An improved guard for boots, shoes, and clogs. (Patented by Alfred Vincent Newton.)
HARRISON, CHARLES C. -	2498	13th Oct. 1860	Lenses. (Patented by Richard Archibald Brooman.)
HARRISON, CHARLES WEIGHT- [MAN.	2118	1st Sept. 1860	Electric telegraphs.
HARRISON, EDWARD -	1788	24th July 1860	A certain improved compound or compounds to be used as a substitute for gunpowder.
HARRISON, EDWARD -	2642	29th Oct. 1860	A certain compound or certain compounds to be used as a substitute for gunpowder.
HARRISON, EDWIN -	92	13th Jan. 1860	Gas meters.
HARRISON, GEORGE -	889	9th April 1860	Self-acting mules.
HARRISON, GEORGE -	1384	6th June 1860	Machinery or apparatus for spinning, doubling, and winding fibrous materials.
HARRISON, JOSEPH -	1485	19th June 1860	Machines for spinning cotton and other fibrous substances.
HARRISON, RICHARD -	754	23rd March 1860	Machinery or apparatus for preparing, spinning and twisting cotton and other fibrous substances.
HARRISON, ROBERT -	2883	24th Nov. 1860	Machinery or apparatus for preparing cotton and other fibrous substances for spinning.
HART, GEORGE WILLIAM -	2576	22nd Oct. 1860	Construction of vessels of war; propellers for the same.
HART, GEORGE WILLIAM -	2981	5th Dec. 1860	Improvements in the embrasures of fortifications and in the port holes of ships of war.
HART, HENRY -	1495	20th June 1860	Machinery or apparatus for cutting and shaping metals and other substances.
HART, THOMAS -	1950	11th Aug. 1860	An improved brick-making machine.
HARTELL, THOMAS ROLLASON	508	24th Feb. 1860	Forming the fastenings of caps or stoppers for jars and bottles; machinery or apparatus employed therein. (Patented by John Henry Johnson.)
HARTLEY, JOHN -	2602	25th Oct. 1860	"Self-acting mules" for spinning cotton and other fibrous substances.
HARTLEY, THOMAS -	1802	25th July 1860	An improved fibrous material for manufacturing woven fabrics.
HARTLEY, WILLIAM -	257	1st Feb. 1860	Steam-engines.
HARTMANN, JULES ALBERT -	1043	25th April 1860	Extraction of a certain colouring matter from rags and other waste vegetable textile fabrics containing the same.
HARVEY, JOHN -	1007	21st April 1860	Safety valves.
HARVEY, WILLIAM JAMES -	1056	26th April 1860	Improvements in the manufacture of breech loading fire-arms, also in cartridges applicable for the same.
HARWOOD, GEORGE SHAW -	3051	12th Dec. 1860	Improved machinery for drying, stretching, and tentering woollen or other cloths. (Communicated by Charles F. Bennett.)
HARWOOD, WILLIAM -	389	11th Feb. 1860	Machinery for reaping and mowing.
HASELTINE, GEORGE -	807	29th March 1860	Spring bed-bottoms. (Partly communicated by Philip Ulmer.)
HASKARD, SAMUEL BURTON -	827	30th March 1860	Machinery for the manufacture of looped fabrics.

[Hat]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Hea]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
HATHAWAY, CHARLES -	2620	27th Oct. 1860	Construction of street railways; wheels to run thereon.
HATHAWAY, PHILIP -	667	13th March 1860	Manufacture of chains and other similar articles.
HATHAWAY, RICHARD ISAAC -	982	19th April 1860	A substitute for ordinary butter, especially adapted for the use of pastry cooks, biscuit bakers, and general culinary purposes.
HAUCK, JOHN -	16	3rd Jan. 1860	Improvements in the cut off motion and slide valves of steam-engines. (Patented by Alfred Vincent Newton.)
HAUGHTON, JAMES -	1601	3rd July 1860	Machinery or apparatus for slubbing and spinning wool or other fibrous substances.
HAVEMANN, RUDOLPH FRANZ [HEINRICH.]	2689	2nd Nov. 1860	Preparing compounds of india-rubber, gutta-percha and allied gums. (Patented by William Edward Newton.)
HAWKINS, ABDIEL -	267	2nd Feb. 1860	An invention for finishing machine-wrought wood carvings, and also for finishing certain wood carvings rough hewn or cut by hand-labour.
HAWKINS, CHARLES -	50	7th Jan. 1860	An improved apparatus for the use of railway guards and passengers, for the purpose of communicating with the engine drivers of railway trains when necessary.
HAWKINS, JOHN -	50	7th Jan. 1860	An improved apparatus for the use of railway guards and passengers, for the purpose of communicating with the engine drivers of railway trains when necessary.
HAWKSEY, ANDREW -	1583	30th June 1860	An improved method of drawing and with-drawing window curtains and other similar hangings.
HAWORTH, JOHN -	2326	25th Sept. 1860	Tramways for streets and ordinary roads, carriages for running thereon.
HAY, ALEXANDER -	2519	16th Oct. 1860	An improved mode of constructing railways. (Patented by William Edward Newton.)
HAY, ANDREW K. -	508	24th Feb. 1860	Forming the fastenings of caps or stoppers for jars and bottles; machinery or apparatus employed therein (Patented by John Henry Johnson.)
HAY, JOHN -	2259	17th Sept. 1860	Machinery or apparatus for making gas burners.
HAYEM, ISIDORE, junior -	753	23rd March 1860	Making cravats and stocks; magical cravats.
HAYES, JOSEPH -	95	13th Jan. 1860	An improved break for common road and railway carriage wheels, applicable also to the wheels of machinery for raising and lowering weights.
HAYNES, WILLIAM -	488	23rd Feb. 1860	Obtaining metals from their ores or matrices.
HAYWARD, THOMAS CARLYLE	2500	13th Oct. 1860	Improved ship's signals for day and night.
HAYWOOD, HERBERT -	765	24th March 1860	Machinery for the manufacture of buttons and other similar articles.
HAYWOOD, JAMES, junior -	1619	4th July 1860	An improved arrangement of combined thrashing and dressing machine.
HEADLAM, THOMAS WILLIAM	2583	23rd Oct. 1860	Stuffing chairs, couches, mattresses, pillows, and other such like purposes, especially adapted also for stuffing cabin furniture and the seats and backs of public and private vehicles.

[Hea.]

## ALPHABETICAL INDEX OF PATENTEES

[Hen.]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
HEAL, JOHN HARRIS - -	719	19th March 1860	Spring mattresses.
HEARD, JOSEPH M. - -	2008	20th Aug. 1860	An improved mode of coupling the rails of railways. (Patented by Alfred Vincent Newton.)
HEATLEY, THOMAS - -	1119	4th May 1860	Thrashing-machines.
HEATON, JAMES - - -	554	29th Feb. 1860	Looms for weaving.
HECHT, SALOMON - - -	676	14th March 1860	A new mode of advertizing on articles of earthenware, pottery, and the like in general use.
HEDLEY, GEORGE HENRY [CARNE.]	999	21st April 1860	Valves and apparatus for regulating the flow of fluids.
HEDLEY, OSWALD DODD -	1851	30th July 1860	Obtaining motive-power; evaporating liquids.
HEDLEY, TOM ABERCROMBIE -	999	21st April 1860	Valves and apparatus for regulating the flow of fluids.
HÉDOU, EUGÈNE - - -	1796	25th July 1860	Improvements in the manufacture of "tar paper," which improvements may also be applied to several other uses.
HEID, JOHN DANIEL - -	570	1st March 1860	Planing-machines for files and other metal objects, straight, curved, or otherwise.
HEIGHWAY, RICHARD HUS- [BAND.]	1285	24th May 1860	An improved cooking apparatus.
HEINDRYCKX, FLORIDE - -	1324	29th May 1860	Construction of railway chairs.
HEINDRYCKX, FLORIDE - -	1652	9th July 1860	Construction of the permanent way of railways.
HEINEMANN, LOUIS - - -	2856	21st Nov. 1860	Improved means whereby engine drivers and persons in charge of or attending to railway trains may obtain intelligence or information for increased safety in travelling.
HELENUS, EUGÈNE - - -	1388	6th June 1860	An improved mode of preparing various plants to be used in the manufacture of paper. (Patented by Charles Stevens.)
HELLARD, ROBERT - - -	2373	2nd Oct. 1860	Reaping and mowing machines.
HELSON, MICHEL - - -	2929	29th Nov. 1860	Welding. (Patented by Henry Gilbee.)
HEMMING, FREDERICK SHAND	2508	15th Oct. 1860	Improved machinery for crushing quartz and other substances, and for mechanically and chemically extracting gold from auriferous stones or soils, and for procuring silver, copper, zinc, lead, iron, and other metals from their respective ores or impregnated liquids.
HEMPEL, ARTHUR CHARLES -	199	26th Jan. 1860	Fire-escapes.
HEMPSON, AMIS - - -	2080	29th Aug. 1860	Improved seats for theatres or other public buildings.
HENDERSON, CHARLES - -	1472	16th June 1860	Flooring and bench cramps.
HENDERSON, JAMES M'LIN- [TOCK.]	2657	30th Oct. 1860	Marine steam-engines.
HENDERSON, JOHN - - -	1223	17th May 1860	Looms for weaving.
HENDERSON, WILLIAM - -	1099	1st May 1860	Manufacture or production of nitrate of potash and soda; application and use of certain products of such manufacture in the manufacture of soap.
HENDERSON, WILLIAM - -	1223	17th May 1860	Looms for weaving.



[Hen]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Hen

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
HENDERSON, WILLIAM - -	2525	17th Oct. 1860	Obtaining copper, silver, tin, and several other metals from their ores, or any other natural or artificial compound containing one or more of these metals.
HENRIONNET, MATHIEU LOUIS	2777	13th Nov. 1860	Treatment of fossil and other mineral phosphates of lime.
HENRY, ALEXANDER - -	375	11th Feb. 1860	Apparatus for cleaning fire-arms.
HENRY, ALEXANDER - -	2802	15th Nov. 1860	Rifled fire-arms.
HENRY, CHARLES - - -	2973	4th Dec. 1860	Means or processes for obtaining ornamental and other devices or effects on metal, glass, stone, and earthenware.
HENRY, JOHN - - -	443	17th Feb. 1860	Manufacture of flounced dresses.
HENRY, JOHN - - -	2859	22nd Nov. 1860	Printing warps; apparatus for the same.
HENRY, MICHAEL - - -	451	18th Feb. 1860	Production of gas for lighting and heating; apparatus employed therein. (Communicated by Louis Cyrille Bureau.)
HENRY, MICHAEL - - -	675	14th March 1860	Construction of artificial hands, feet, and limbs, or substitutes for natural hands, feet, and limbs, and parts thereof. (Communicated by José Gallegos.)
HENRY, MICHAEL - - -	687	15th March 1860	Twisting fibrous materials; apparatus employed therein. (Communicated by François Durand and Henry Auguste Pradel.)
HENRY, MICHAEL - - -	678	5th April 1860	Mode of and apparatus for obtaining motive-power. (Communicated by Henry François Cohade.)
HENRY, MICHAEL - - -	1114	3rd May 1860	Mode of and apparatus for propelling, turning, and changing the direction of ships, balloons, and other bodies. (Communicated by Louis Coignard.)
HENRY, MICHAEL - - -	1268	22nd May 1860	An improved mode of suspending gas-lights. (Communicated by Jean Claude Charles Gallibour.)
HENRY, MICHAEL - - -	1454	14th June 1860	Treating vegetable substances so as to obtain paper-pulp and other useful products therefrom. (Communicated by Louis Henry Obert, Jean Baptiste Vasseur, and Auguste Houbigant.)
HENRY, MICHAEL - - -	1697	13th July 1860	Improvements in looms and in the jacquard apparatus of looms. (Communicated by Messieurs François Durand and Henry Auguste Pradel.)
HENRY, MICHAEL - - -	1814	26th July 1860	Engines for obtaining motive-power. (Communicated by Francis Million.)
HENRY, MICHAEL - - -	2235	14th Sept. 1860	Employment of a certain sorting process for silk and other fibrous materials, and in apparatus for the purpose of performing the same. (Communicated by Pierre Raimond Huguet.)
HENRY, MICHAEL - - -	2371	1st Oct. 1860	An addition to or improvement in gas meters. (Communicated by Guillaume Amedée, Filhol Peyre, and François Barthelemy.)
HENRY, MICHAEL - - -	2649	29th Oct. 1860	An improved method of manufacturing railway wheel tyres and other articles of steel. (Communicated by Pierre Sabatier and Nicolas Theophile Deyeux.)

[Hen]

## ALPHABETICAL INDEX OF PATENTEEES

[Hey]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
HENRY, MICHAEL - - -	3099	17th Dec. 1860	Improvements applicable to fishing-nets. (Communicated by Charles François Lepage Charles Jaques Pombia, aîné, and Alexis Segueineau.)
HENRY, MICHAEL - - -	3119	19th Dec. 1860	Manufacture of colours applicable for various uses in arts and manufactures. (Communicated by Bénédict Marie Alexandre Glénard, and The Société Coignet, père, fils, et cie.)
HENRY, WILLIAM ARTHUR -	66	10th Jan. 1860	Machinery or apparatus for the manufacture of screws.
HENSON, JAMES - - -	1725	17th July 1860	Manufacturing canvas and other fabrics for tarpaulings, sacks, rick-cloths, ship sails, and for other purposes; uniting the edges of the same.
HENSON, JAMES - - -	2428	8th Oct. 1860	Manufacture of chains for coupling or connecting the carriages, waggons, and other vehicles on railways, applicable also to various other purposes.
HENSON, ROBERT - - -	3059	13th Dec. 1860	Eye glass and spectacle frames.
HENSON, WILLIAM FREDERICK	1711	16th July 1860	Railway carriage buffer and other springs.
HENSON, WILLIAM FREDERICK	1725	17th July 1860	Manufacturing canvas and other fabrics for tarpaulings, sacks, rick-cloths, ship sails, and for other purposes; uniting the edges of the same.
HENSON, WILLIAM FREDERICK	2750	8th Nov. 1860	Certain improved fabrics made entirely or partially of alpaca or mohair.
HEPPLESTON, THOMAS - -	1278	23rd May 1860	Breech loading fire-arms; projectiles to be used therewith.
HERBELOT, ARMAND LOUIS [ANDRÉ.]	2176	8th Sept. 1860	An improved method of manufacturing paper from wood.
HERBERT, JANE ANN - -	731	21st March 1860	Manufacturing of oxychloride of lead. (Communicated by Ludwig Brumley.)
HERLAND, AUGUSTIN MARIE -	2577	22nd Oct. 1860	Improvements in apparatus for measuring the flow of liquids, partly applicable to ordinary water cisterns. (Patented by John Henry Johnson.)
HERRING, CALVIN T. - -	1666	11th July 1860	Gas regulators. (Patented by William Kemble Hall.)
HERRING, GEORGE - - -	2157	6th Sept. 1860	Treating a certain substance to obtain textile fibres and materials for paper making and charcoal for gunpowder, pyrotechnic and other purposes.
HESSE, ——— - - -	974	18th April 1860	Improvements in tilling land and in actuating agricultural implements by steam power, and in apparatus employed therein. (Patented by John Fowler, junior, William Worby, and David Greig.)
HETHERINGTON, JOHN MUIR -	2791	14th Nov. 1860	Mules for spinning.
HEWENS, RICHARD - - -	1775	23rd July 1860	An improvement in kitchen ranges, which is also applicable to stoves in general.
HEWETSON, HENRY - - -	382	13th Feb. 1860	Rockets.
HEWETSON, HENRY - - -	1955	13th Aug. 1860	Rockets; apparatus for discharging the same.
HEWITSON, WILLIAM WATSON	130	18th Jan. 1860	Steam hammers.
HEWITT, WILLIAM - - -	2717	6th Nov. 1860	Whip holders or whip sockets.
HEYNDRIKX, PERCY JOHN [CHARLES.]	2266	18th Sept. 1860	Brewing malt liquors; apparatus employed therein. (Patented by Edward Joseph Hughes.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
HEYWOOD, EDWIN - - -	896	10th April 1860	Means or apparatus employed in winding yarns.
HICKISSON, JAMES - - -	1262	22nd May 1860	Means or apparatus for ascertaining the character of metals, particularly applicable to the detection of counterfeit coin.
HICKMAN, JOHN - - -	1471	16th June 1860	Draw bars for railway carriages and trucks.
HICKS, WILLIAM CLEVELAND	2745	7th Nov. 1860	An improved mode of and apparatus for sewing. (Patented by Alfred Vincent Newton.)
HICKS, WILLIAM CLEVELAND	2757	8th Nov. 1860	Construction of sewing-machines. (Patented by Alfred Vincent Newton.)
HIGGIN, JAMES - - -	1879	3rd Aug. 1860	Improvements in railways, in railway carriages, and in the mode of retarding and stopping railway carriages.
HIGGINBOTHAM, EDWIN [HENRY.	1400	7th June 1860	Machinery or apparatus for the prevention of explosions of steam-boilers arising through deficiency of water or over-pressure of steam.
HIGGINBOTHAM, EDWIN [HENRY.	2971	4th Dec. 1860	Machinery or apparatus for the prevention of explosions of steam-boilers arising through deficiency of water or over pressure of steam.
HIGGINBOTTOM, WILLIAM -	1544	25th June 1860	Pipe joints and valves for gas or water mains and sanitary purposes generally.
HIGGINS, HATSEL - - -	548	28th Feb. 1860	Supporting the fluke of an anchor, and discharging the same from the bulwark rail of a vessel.
HIGGINS, JAMES - - -	1195	15th May 1860	Machinery or apparatus for preparing and spinning cotton and other fibrous materials.
HIGGINS, JAMES - - -	1895	4th Aug. 1860	Carding-engines.
HIGGINS, JAMES - - -	2501	13th Oct. 1860	Machinery or apparatus for preparing, spinning, and doubling cotton and other fibrous materials.
HIGGINS, JAMES - - -	2728	6th Nov. 1860	Machinery or apparatus for preparing cotton and other fibrous materials for spinning.
HILL, ALFRED CLAYTON -	400	20th Feb. 1860	Protecting the sides and ends of puddling furnaces.
HILL, CHARLES GREY - -	1695	13th July 1860	Machinery for the manufacture of bonnet fronts, rouches, and other millinery trimmings, or for other purposes.
HILL, CHARLES JOHN - -	2998	7th Dec. 1860	Improvements in presses for stamping medals embossing and cutting or punching out metal or paper, and printing on paper, linen or any other material.
HILL, HENRY CHEETHAM -	40	6th Jan. 1860	Certain improvements in or applicable to machines for carding cotton, flax, wool and other fibrous materials.
HILL, HENRY CHEETHAM -	2188	11th Sept. 1860	Construction of stays for steam-boilers.
HILL, JOHN WILLIAM - -	3093	17th Dec. 1860	Improvements in sewing-machines and the use thereof.
HILL, JOSEPH - - -	923	13th April 1860	Wire screens.
HILL, THOMAS - - -	258	1st Feb. 1860	Steam-boilers.
HILL, WILLIAM - - -	1466	16th June 1860	Certain improvements in holders and connectors for holding papers and fancy wares, exposed for sale or for private use.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
HILL, WILLIAM - - -	3172	27th Dec. 1860	Manufacture of spring knife scales and knife handles.
HILLAM, EDWARD - - -	1017	24th April 1860	Apparatus employed in finishing textile fabrics.
HILLEL, JULES FERDINAND -	56	9th Jan. 1860	An improved machine for squatting, separating, and tearing rushes and all other textile fibrous plants.
HILLEL, JULES FERDINAND -	910	11th April 1860	Improvements in the apparatus and in the mode of treating spanish grass and other fibrous materials to be used in the manufacture of paper pulp.
HILLS, GEORGE WILLIAM -	657	10th March 1860	Furnaces.
HINCHLIFFE, GEORGE -	200	26th Jan. 1860	An instrument or apparatus to facilitate and simplify calculations, and particularly adapted for computing the weights of cotton warps, applicable also for woollen and worsted warps and warps of other fibrous substances.
HINCHLIFFE, WILLIAM -	268	2nd Feb. 1860	Apparatus for applying steam and other vapours, gases, or fluids, to the production of motive-power, and which may also be used for a pump or gas exhauster or other similar purpose.
HINE, JOSEPH - - -	2321	24th Sept. 1860	Improvements in markers for billiards, cricket, whist, or other games of skill or chance, a modification of which is also applicable for indicating years, months, days, and dates.
HINKS, JAMES - - -	1257	22nd May 1860	Lamps for burning petroline and other liquid hydro-carbons; supports for the said lamps.
HINSBERGH, JEAN HUBERT [MARIE VAN.]	2691	2nd Nov. 1860	Cleaning and preparing pork's wool so as to give it the elasticity of horse hair and the flexibility of wool, for bedding, sofas, chairs, &c. &c.
HINTON, GEORGE - - -	1482	20th June 1860	Cupola furnaces.
HINTON, GEORGE - - -	2700	3rd Nov. 1860	Improvements in the manufacture of iron, steel-iron, and steel from certain waste products, and in the machinery or apparatus to be employed in such manufacture, which improvements are also applicable to the re-melting of large lumps of iron or steel.
HIRON, HENRY FRANKLIN -	1497	20th June 1860	An improved vertical paddle wheel.
HIRSCH, HERMANN - -	1787	24th July 1860	Screw propellers.
HIRSCH, HERMANN - -	2930	29th Nov. 1860	Screw propellers.
HIRST, BENJAMIN - -	2077	28th Aug. 1860	Construction of steam and other engines.
HITCHCOCK, DE WITT CLINTON	2309	21st Sept. 1860	An improved mode of producing relief printing plates, blocks, and cylinders. (Patented by Alfred Vincent Newton.)
HOARD, C. B. - - -	1251	21st May 1860	Mode of and apparatus for winding clocks or other timekeepers. (Patented by William Edward Newton.)
HOARD, JOHN WALDRON -	663	14th March 1860	An improved construction of nail plate feeder. (Patented by Alfred Vincent Newton.)
HOARE, CHARLES - - -	2555	19th Oct. 1860	Machinery for twisting and laying flax, hemp, and other fibrous materials.

Hos]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Hol

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
HOARE, DEANE JOHN - -	2172	8th Sept. 1860	Locks.
HOBSON, AARON - - -	2463	10th Oct. 1860	An atmospheric trap for the prevention of smells arising from cesspools, drains, waterclosets, urinals, or any other place where smell may arise.
HOBSON, JAMES - - -	2463	10th Oct. 1860	An atmospheric trap for the prevention of smells arising from cesspools, drains, waterclosets, urinals, or any other place where smell may arise.
HOCKIN, BARTHOLOMEW -	3015	8th Dec. 1860	Construction and mode of fitting and working furnaces.
HODGKINSON, WILLIAM -	2349	27th Sept. 1860	Machinery or apparatus in the manufacture of figured lace made on bobbin net machines.
HODGSON, BROOK - - -	1832	28th July 1860	Manufacture of a certain cloth or fabric commonly called "Utrecht velvet."
HODGSON, HENRY - - -	233	30th Jan. 1860	Improvements in manufactures from peat.
HODGSON, HENRY - - -	714	19th March 1860	Means or apparatus for preparing and spinning fibrous substances.
HODGSON, JOHN PICKERING -	1839	28th July 1860	An improved coffee pot.
HODGSON, WILLIAM - - -	714	19th March 1860	Means or apparatus for preparing and spinning fibrous substances.
HODSON, WILLIAM - - -	2607	25th Oct. 1860	Fire baskets or moveable grates and ovens.
HOGG, JAMES (senior) - -	2834	17th Nov. 1860	Ornamenting the edges of cloth bound books.
HOGG, JAMES (junior) - -	2834	17th Nov. 1860	Ornamenting the edges of cloth bound books.
HOGG, JOHN - - - -	2834	17th Nov. 1860	Ornamenting the edges of cloth bound books.
HOLCROFT, GEORGE - - -	1162	11th May 1860	Manufacture of iron.
HOLDEN, ISAAC - - - -	810	29th March 1860	Means or apparatus for preparing and combing wool and other fibrous substances.
HOLDEN, ROBERT - - - -	2118	1st Sept. 1860	An improved "warping machine."
HOLDER, JOSEPH - - - -	1016	24th April 1860	Apparatus for consuming all noxious exhalations from drying ovens used for chemical and chemical manure works, and arising from such works and from mixing decayed substances in strong acids.
HOLDSWORTH, SAMUEL - -	1223	17th May 1860	Looms for weaving.
HOLGATE, WILLIAM - - -	2274	19th Sept. 1860	An improved beaming frame.
HOLLAND, ALFRED - - -	1252	21st May 1860	Construction of roller blinds.
HOLLAND, GOODRICH - - -	3180	28th Dec. 1860	Machinery for cleaning, sorting according to size, and doubling silk and other threads. (Patented by Ira Dimock.)
HOLLAND, HENRY - - - -	1746	19th July 1860	Manufacture of steel tubular stretchers for umbrellas and parasols.
HOLLAND, HENRY - - - -	1948	11th Aug. 1860	Manufacture of umbrellas and parasols.
HOLLAND, WILLIAM - - -	608	6th March 1860	Manufacture of the stretchers of umbrellas and parasols.
HOLLAND, WILLIAM - - -	1584	30th June 1860	Manufacture of runner notches and top notches for umbrellas and parasols.
HOLLANDS, GEORGE - - -	2120	1st Sept. 1860	Improved apparatus to be used in the process of fermentation.

[Hol]

## ALPHABETICAL INDEX OF PATENTEES

[Hor]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
HOLLIS, EBENEZER - -	1768	21st July 1860	Certain improvements in muzzle loading guns, applicable for military and sporting purposes, parts of which are also applicable to certain descriptions of pistols and breech loading guns, as also in the manner of fixing or connecting bayonets to military guns.
HOLLIS, WILLIAM - - -	2334	26th Sept. 1860	An improved composition for steel moulders.
HOLMAN, STEPHEN - - -	3000	7th Dec. 1860	Machinery for communicating motion to and transmitting motion from reciprocating rods.
HOLMES, NATHANIEL JOHN -	234	30th Jan. 1860	An improved method of purifying fluids or substances by electro-magnetism.
HOLMES, THOMAS - - -	1968	14th Aug. 1860	Machinery for ornamenting or embossing lace or other fabrics.
HOLMES, THOMAS - - -	2025	28th Nov. 1860	Improvements in preparing and in tanning hides and skins.
HOLMS, WILLIAM - - -	1976	15th Aug. 1860	Machinery or apparatus for weaving.
HOLROYD, WARD - - -	2114	1st Sept. 1860	Looms for weaving.
HOLT, JOHN - - -	2568	22nd Oct. 1860	Machinery for preparing and spinning cotton and other fibrous materials.
HOLZWASSER, JONAS - -	2541	18th Oct. 1860	Steam-engines.
HOMERSHAM, WILLIAM COL- [LETT.	2159	7th Sept. 1860	Machinery and implements for ploughing and cultivating land.
HOOD, SAMUEL - - -	1256	22nd May 1860	Manufacture of improved wrought iron sash frames and casements, and all kinds of wrought iron framing.
HOOD, WALTER - - -	1628	5th July 1860	Ladies' riding trowsers.
HOOD, WALTER - - -	2448	8th Oct. 1860	Ladies' trowsers, drawers, or other under-clothing.
HOOLEY, PETER - - -	1392	6th June 1860	Manufacture of cotton wadding; machinery or apparatus connected therewith.
HOOPER, BARTLETT - -	1194	15th May 1860	Manufacture of a paper suitable for preventing forgery.
HOOPER, WILLIAM - - -	47	6th Jan. 1860	Reworking compounds of india-rubber and sulphur; insulating telegraphic wires or conductors.
HOOPER, WILLIAM - - -	1546	25th June 1860	Reworking compounds of india-rubber and sulphur; insulating telegraphic wires or conductors.
HOPE, DAVID GRAHAM - -	858	3rd April 1860	Slide valves of locomotive and other steam-engines; gearing for working them.
HOPE, LEWIS - - -	1710	14th July 1860	"Knot-stitch" sewing-machines.
HOPGOOD, ASA - - -	1442	12th June 1860	An improved carriage ventilator. (Patented by Alfred Vincent Newton.)
HOPKINSON, JOHN - - -	429	16th Feb. 1860	Machinery for cutting paper.
HOPKINSON, JOHN ADDY -	682	14th March 1860	Steam-boilers and engines; apparatus connected therewith.
HORNER, GEORGE - - -	1359	2nd June 1860	Hackling flax and other fibrous materials; machinery for the same.
HORNSBY, RICHARD, junior -	2468	10th Oct. 1860	Machinery used for washing, wringing, mangling, and churning.
[HORRIDGE, JOHN - - -	10	3rd Jan. 1860	An improved iron wheelway for streets and roads.
HORSEY, HENRY - - -	2370	1st Oct. 1860	Improvements in syphon and other taps or cocks employed for drawing off liquids.



[Hor]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Hoy]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
HORSEY, JAMES - - -	2243	15th Sept. 1860	India-rubber teats.
HORTON, ENOCH - - -	2175	8th Sept. 1860	New or improved machinery to be used in the manufacture of bolts, nuts, and screws.
HORTON, ISAAC - - -	680	14th March 1860	Steam-boilers.
HORTON, THOMAS ROGERS -	332	8th Feb. 1860	Steam-engines and boilers.
HORWOOD, ALBERT - -	28	5th Jan. 1860	Signalling by electricity; apparatus connected therewith, adapted to communicating between railway stations and railway trains, and also applicable to other purposes.
HOUBIGANT, AUGUSTE - -	1454	14th June 1860	Treating vegetable substances so as to obtain paper, pulp, and other useful products therefrom. (Patented by Michael Henry.)
HOUGHTON, FREDERICK BUR- [NETT.]	2004	18th Aug. 1860	Manufacture of paper when the straw of wheat, barley, oats, rye, or rice is employed.
HOULDSWORTH, WILLIAM -	848	3rd April 1860	Machinery or apparatus for preparing cotton or other fibrous substances for spinning.
HOWARD, EDWARD - - -	932	14th April 1860	Machinery or apparatus for sewing. (Patented by Edward Joseph Hughes.)
HOWARD, JAMES - - -	605	5th March 1860	Construction of horse rakes.
HOWARD, JAMES - - -	1152	9th May 1860	An improved construction of horse hoe.
HOWARD, LEWIS - - -	395	13th Feb. 1860	Improvements in the fabric or material used for bolting or sifting flour and other matters.
HOWARD, LEWIS JOHN THOMAS	395	13th Feb. 1860	Improvements in the fabric or material used for bolting or sifting flour and other matters.
HOWARD, WILLIAM - - -	1279	23rd May 1860	An improved window blind.
HOWARTH, THOMAS - - -	1186	14th May 1860	Improvements in machinery or apparatus applicable to looms for weaving, and the tools employed therein.
HOWAT, ANDREW - - -	885	9th April 1860	Miners' safety lamps.
HOWDEN, JAMES - - -	2854	21st Nov. 1860	Steam-engines and boilers; apparatus connected therewith.
HOWE, ELIAS, junior - -	2726	6th Nov. 1860	Projectiles. (Communicated by John Webster Cochran.)
HOWE, TYLER - - -	3176	27th Dec. 1860	Construction of bedsteads. (Patented by Alfred Vincent Newton.)
HOWELL, JOSEPH BENNETT -	502	24th Feb. 1860	Casing ships, batteries, and other structures, for the purpose of resisting shot, shell, and other projectiles.
HOWELL, JOSEPH BENNETT -	659	12th March 1860	Tubes for boilers.
HOWELL, THOMAS - - -	54	7th Jan. 1860	Manufacture of glass.
HOWELLS, WILLIAM - - -	1517	22nd June 1860	A portable window platform.
HOWES, WALTER - - -	282	3rd Feb. 1860	A new or improved method of attaching lamps and whip sockets to carriages.
HOWSON, HENRY - - -	211	27th Jan. 1860	Inkstands. (Patented by John Henry Johnson.)
HOYLE, THOMAS - - -	459	20th Feb. 1860	Improvements in the construction of screens employed for cleaning wheat and other grain.
HOYT, JOHN - - -	2545	18th Oct. 1860	Paper making machinery. (Patented by John Louis Jullion.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
HUARD, LOUIS PIERRE -	1012	23rd April 1860	Milk cans. (Patented by Richard Archibald Brooman.)
HUBART, ALFRED - -	1296	25th May 1860	Manufacturing of glass casks and barrels.
HUBBARD, J. B. - -	2551	19th Oct. 1860	A metallic thermometer. (Patented by Joseph A. Munn.)
HUDDART, GEORGE AUGUSTUS	263	1st Feb. 1860	Obtaining motive-power.
HUDDART, GEORGE AUGUSTUS	342	8th Feb. 1860	Apparatus for obtaining motive-power.
HUDDART, GEORGE AUGUSTUS	365	10th Jan. 1860	Obtaining and applying motive-power.
HUDDART, GEORGE AUGUSTUS	701	16th March 1860	Obtaining and applying motive-power.
HUDDART, JOSEPH DURHAM [ERSKINE.]	263	1st Feb. 1860	Obtaining motive-power.
HUDDART, JOSEPH DURHAM [ERSKINE.]	701	16th March 1860	Obtaining and applying motive-power.
HUDSON, FREDERIC - -	15	3rd Jan. 1860	Gas meters.
HUDSON, FREDERIC - -	1903	7th Aug. 1860	Spring rollers for window blinds.
HUDSON, (COLONEL) JOSEPH -	38	6th Jan. 1860	A swimming and floating apparatus.
HUDSON, ROBERT - -	3029	10th Dec. 1860	Means or apparatus for the generation of steam.
HUDSON, WILLIAM - -	432	17th Feb. 1860	Power-loom for weaving.
HUDSON, WILLIAM - -	697	16th March 1860	Power-loom for weaving.
HUDSON, WILLIAM HENRY -	1550	26th June 1860	Locks.
HUGGETT, JOHN - -	2148	5th Sept. 1860	A method of and apparatus for regulating the light in street and other lamps, whereby the relighting and extinguishing of the same may be dispensed with.
HUGGINS, HORATIO JAMES -	193	25th Jan. 1860	Improvements in filtering and decolourizing cane juice, solutions of sugar and other liquids, and in the manufacture of sugar.
HUGHES, CHARLES - -	115	17th Jan. 1860	Improvements in metal ties or fastenings for packing bales of cotton, wool, or other fibrous substances, which improvements are also applicable to packing bales of manufactured goods. (Patented by William Hughes.)
HUGHES, EBENEZER WILLIAM	2566	20th Oct. 1860	Improvements in the construction of tents, particularly adapted to military purposes, part of which invention is equally applicable to temporary buildings generally.
HUGHES, EDWARD JOSEPH -	176	24th Jan. 1860	Manufacture of certain colouring matters by the oxidation of salts of aniline, and other salts of a similar nature. (Communicated by Paul Depouilly and Charles Lauth.)
HUGHES, EDWARD JOSEPH -	834	31st March 1860	Manufacture of oil of turpentine and resin; apparatus connected therewith. (Communicated by James Napier.)
HUGHES, EDWARD JOSEPH -	932	14th April 1860	Machinery or apparatus for sewing. (Communicated by James Wilcox and Edward Howard.)
HUGHES, EDWARD JOSEPH	1402	7th June 1860	Machinery or apparatus for roving, spinning, and doubling cotton, wool, flax, and other fibrous materials. (Communicated by William Henry Rhodes and Theodore Rüdiger.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
HUGHES, EDWARD JOSEPH -	2266	18th Sept. 1860	Brewing malt liquors; apparatus employed therein. (Communicated by Joseph Charles Heyndrickx-Percy and John Francis Vandenhove.)
HUGHES, EDWARD JOSEPH -	2432	8th Oct. 1860	Preparation of certain colouring matters, and also a process of printing and dyeing woven fabrics, yarns, and other substances. (Communicated by Paul Depouilly, Ernest Depouilly, and Charles Lauth.)
HUGHES, EDWARD THOMAS -	350	9th Feb. 1860	Scouring wool; machinery or apparatus employed therein. (Communicated by Isaie Drubay and Marie Macé Fremont.)
HUGHES, EDWARD THOMAS -	514	25th Feb. 1860	Boring apparatus. (Communicated by George Kolb.)
HUGHES, EDWARD THOMAS -	621	7th March 1860	A hydro-dynamical re-acting rotary steam-engine. (Communicated by William Henry Christian Voss.)
HUGHES, EDWARD THOMAS -	1091	30th April 1860	Jointing or connecting rails of railways. (Communicated by Pierre Irénée Leys.)
HUGHES, EDWARD THOMAS -	1301	26th May 1860	Improved methods of obtaining artificial light; apparatus and burners connected therewith. (Communicated by Gustav Arnold Kühne.)
HUGHES, EDWARD THOMAS -	1385	6th June 1860	Coating or plating the faces of printing type and stereotype plates. (Communicated by Joseph Corduan.)
HUGHES, EDWARD THOMAS -	1590	2nd July 1860	Obtaining colouring matter from the lentisc or mastic tree. (Communicated by Christophe Muratore.)
HUGHES, EDWARD THOMAS -	1637	6th July 1860	Machinery or apparatus for pressing and ironing, applicable to clothing, bookbinding, and other purposes. (Communicated by Auguste François Dusautoy.)
HUGHES, EDWARD THOMAS -	1673	12th July 1860	Shrouds or winding sheets. (Communicated by Monsieur Antoine Conche.)
HUGHES, EDWARD THOMAS -	2394	3rd Oct. 1860	Healds or heddles employed in looms for weaving. (Communicated by Jean Pierre Bourdelin.)
HUGHES, EDWARD THOMAS -	2941	30th Nov. 1860	Manufacture of metal tubes. (Communicated by C. Kessler.)
HUGHES, EDWARD THOMAS -	2963	3rd Dec. 1860	Treating and decomposing fatty matters; machinery or apparatus employed therein. (Communicated by Monsieur L. Martin.)
HUGHES, HENRY -	3147	22nd Dec. 1860	An improved method of making wheels for carts, waggons, and carriages for common roads and railways.
HUGHES, HESKETH -	1327	29th May 1860	Improvements in machinery for goffering, fluting, shaping, embossing, and connecting together lace, ribbons, and other like materials, parts of which improvements are also applicable to the shaping and corrugating of metals.
HUGHES, JOHN -	1357	2nd June 1860	Cannon and other ordnance.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
HUGHES, JOHN - -	1805	25th July 1860	Improvements in the manufacture of plates for coating or covering and strengthening ships and other structures, and in fixing the same.
HUGHES, JOHN - -	2131	4th Sept. 1860	Manufacture of tin and terne plates; apparatus employed therein.
HUGHES, RICHARD HUGH -	3028	10th Dec. 1860	Means or apparatus for supplying fresh air to mines and other places.
HUGHES, THOMAS - -	2782	13th Nov. 1860	Spittoons.
HUGHES, WILLIAM - -	115	17th Jan. 1860	Improvements in metal ties or fastenings for packing bales of cotton wool or other fibrous substances, which improvements are also applicable to packing bales of manufactured goods. (Communicated by Charles Hughes.)
HUGON, PIERRE - - -	615	6th March 1860	Obtaining and applying motive-power.
HUGON, PIERRE - - -	1915	8th Aug. 1860	Apparatus for burning gas in carriages, ships and other moving structures. (Patented by Richard Archibald Brooman.)
HUGON, PIERRE - - -	2902	26th Nov. 1860	An improved mode of firing or igniting explosive gaseous compounds in motive-power engines.
HUGOULIN, JOSEPH FRANÇOIS	2868	23rd Nov. 1860	Treating cane-trash. (Patented by James Felix Carosin.)
HUGUET, JEAN BAPTISTE -	1524	22nd June 1860	Lithographic printing presses. (Patented by William Edward Newton.)
HUGUET, PIERRE RAIMOND -	2235	14th Sept. 1860	Employment of a certain sorting process for silk and other fibrous materials, and an apparatus for the purpose of performing the same. (Patented by Michael Henry.)
HULETT, DAVID - - -	13	3rd Jan. 1860	Apparatus for measuring gas; apparatus for indicating the pressure of gas.
HULME, GEORGE - - -	2368	1st Oct. 1860	Process of carding wool, cotton, silk or other fibrous materials; machinery or apparatus applicable for that purpose.
HULME, THOMAS DAVENPORT	180	24th Jan. 1860	Machinery or apparatus for propelling ships and vessels on the water.
HULME, WALTER - - -	180	24th Jan. 1860	Machinery or apparatus for propelling ships and vessels on the water.
HUMBERTJEAN, JOSEPH - -	1153	10th May 1860	Breech loading fire-arms. (Patented by William Edward Gedge.)
HUMFREY, CHARLES - - -	491	23rd Feb. 1860	An improved lubricant for small-arms and ordnance ammunition.
HUMFREY, CHARLES - - -	2875	23rd Nov. 1860	Distilling coal and peat and bituminous and coaly minerals; treatment of the products therefrom.
HUMFREY, CHARLES, junior -	2875	23rd Nov. 1860	Distilling coal and peat and bituminous and coaly minerals; treatment of the products therefrom.
HUMPHREYS, EDWARD - - -	378	11th Feb. 1860	Marine steam-boilers.
HUMPHREYS, EDWARD - - -	595	3rd March 1860	Improvements in marine boiler furnaces and in feeding the same.
HUNT, EDMUND - - -	2275	19th Sept. 1860	Improved apparatus for preparing saws. (Communicated by Theodor Andreas Prale.)
HUNT, GEORGE CHARLES -	1833	28th July 1860	Colouring bricks, tiles and other similar articles.

[Hun]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Hyd]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
HUNT, JAMES - - -	1743	18th July 1860	Hair-triggers or detents for single or double barrelled guns or pistols.
HUNT, JOHN ROLFE - -	790	27th March 1860	Tobacco pipes.
HUNT, THOMAS - - -	3141	21st Dec. 1860	Apparatus for supplying steam generators with water.
HUNT, WILLIAM - - -	1126	5th May 1860	Improvements in the manufacture of carbonate of soda and in apparatus to be employed in the said manufacture, also in utilizing waste products obtained in the said manufacture.
HUNT, WILLIAM - - -	2628	27th Oct. 1860	Improvements in obtaining sulphur or certain sulphur compounds from certain other sulphur compounds, and in obtaining carbonic acid.
HUNTER, ANDREW GEORGE -	192	25th Jan. 1860	Separation of sulphur from its combinations with certain metals.
HUNTER, ANDREW GEORGE -	2557	19th Oct. 1860	Treating sulphurets.
HUNTER, ANDREW GEORGE, [junior.]	1354	1st June 1860	Manufacture of chlorine.
HUNTER, EBENEZER - -	3071	13th Dec. 1860	Locks.
HUNTER, JAMES - - -	1892	4th Aug. 1860	Machinery or apparatus for boring and winding for mining purposes.
HUNTER, WILLIAM - -	401	14th Feb. 1860	Apparatus for measuring and regulating the flow of gas as applied to compensating gas meters.
HUNTINGTON, WAIT T. - -	767	24th March 1860	Calendars for clocks or other timekeepers. (Patented by William Edward Newton.)
HURLIMAN, DR. - - -	6	2nd Jan. 1860	Construction of pianofortes. (Patented by Alexander Prince.)
HURST, CHARLES HENRY -	2370	1st Oct. 1860	Improvements in syphon and other taps or cocks employed for drawing off liquids.
HURST, JAMES - - -	723	20th March 1860	Power-looms for weaving.
HURST, JAMES - - -	2354	28th Sept. 1860	Power-looms for weaving.
HUSSON, FRANÇOIS CHARLES -	2747	8th Nov. 1860	Power-looms.
HUTCHINSON, HIRAM - -	1090	30th April 1860	Manufacture of goods coated with india-rubber and other gums; apparatus to be employed therein. (Communicated by Mr. Lorin Burt.)
HUTCHISON (MARY STRANG otherwise)	2491	13th Oct. 1860	Manufacture of lubricating oil.
HYATT, WILLIAM FRANCIS -	1781	23rd July 1860	Improved machinery applicable to washing and churning and the mixing of fluids. (Patented by John Wells Sullivan.)
HYDE, ROBERT - - -	1438	12th June 1860	Apparatus for draining stables.
HYDES, WILLIAM KITCHEN -	2738	7th Nov. 1860	Steam-engines and boilers; mode or method of forming or shaping sheets or plates of metal for certain parts of the same.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
<b>I.</b>			
IBBOTSON, ALFRED BUCKING- [HAM.	1221	17th May 1860	Improvements in vices, part of which improvements is applicable to screw wrenches, spanners, turning lathes, and other tools and machines. (Communicated by Hiram Powers.)
ILIFFE, CHARLES - - -	175	24th Jan. 1860	Double shell buttons.
ILIFFE, CHARLES - - -	2082	29th Aug. 1860	Manufacture of buttons.
ILIFFE, CHARLES - - -	2083	29th Aug. 1860	Manufacture of metallic and non-metallic substances for expanding dresses and other purposes.
IMBS, BROTHERS AND Co. -	3113	18th Dec. 1860	An improved compound felted and textile fabric. (Patented by John Henry Johnson.)
IMRY, JOHN - - - -	625	7th March 1860	Steam and other hammers and anvils.
INCHLEY, JOSEPH - - -	303	4th Feb. 1860	Propelling canal boats and other vessels.
INGERSOLL, JOHN R. - -	1847	30th July 1860	Brushes for the hair or other purposes. (Patented by William Edward Newton.)
INGHAM, JOHN - - - -	200	26th Jan. 1860	An instrument or apparatus to facilitate and simplify calculations, and particularly adapted for computing the weights of cotton warps, applicable also for woollen and worsted warps and warps of other fibrous substances.
INGHAM, JOHN - - -	1294	25th May 1860	Manufacture of fabric of the character of that technically called "camlet."
INGHAM, WILLIAM - - -	268	2nd Feb. 1860	Application of steam and other vapours, gases, or fluids to the production of motive-power.
INGLIS, JAMES - - -	768	24th March 1860	An improved artificial fuel.
INGRAM, THOMAS - - -	861	4th April 1860	Looms for weaving.
INNES, JOHN M <sup>c</sup> - - -	2594	24th Oct. 1860	Machinery, apparatus, or means for actuating or working railway breaks.
INSTONE, WILLIAM - - -	2085	29th Aug. 1860	A new or improved lamp.
IRELAND, JAMES - - -	1840	28th July 1860	Machinery or apparatus for treating hemp, flax, tow, and other fibrous substances.
IRONS, DAVID - - -	442	17th Feb. 1860	Ships' compasses.
ISAAC, SAMUEL - - -	63	10th Jan. 1860	Improvements in over-coats particularly adapted to military purposes.
ISHERWOOD, GEORGE FRE- [DERICK STANLEY.	1738	18th July 1860	Power-looms for weaving.
ISLIP, THOMAS - - -	2907	26th Nov. 1860	Certain improved compositions useful for many purposes in connection with the arts and manufactures, and in machinery or apparatus to be employed therewith, which machinery or apparatus is also applicable to several other purposes of utility.
IVERS, SAMUEL - - -	1713	16th July 1860	Machinery for communicating motion to and for stopping looms for weaving.
IZOD, EDWIN - - -	2877	23rd Nov. 1860	Manufacture of stay cloth.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
<b>J.</b>			
JABUREK, FRANZ - - -	839	31st March 1860	An improved pipe for smoking.
JACK, JAMES - - -	1674	11th July 1860	Construction and arrangement of surface condensers for marine and land steam-engines.
JACK, JAMES - - -	2553	19th Oct. 1860	Improvements in the construction of surface condensers and feed water heaters, and in the combination of certain parts of steam-engines especially adapted for marine purposes.
JACKSON, ALBERT - - -	1741	18th July 1860	Manufacture of window sashes, casements, and other frames suitable for glazing.
JACKSON, ARTHUR - - -	2047	1st Dec. 1860	Improvements in generating steam as adapted to a certain arrangement or construction of steam-engines for transmitting motive-power.
JACKSON, FRANCIS H. - -	374	11th Feb. 1860	Sewing-machines. (Patented by John Henry Johnson.)
JACKSON, HENRY - - -	1830	27th July 1860	Fire-bars.
JACKSON, JOHN - - -	2146	5th Sept. 1860	Lamps and lamp wicks.
JACKSON, JOHN - - -	3075	14th Dec. 1860	Lamps.
JACKSON, JOSHUA - - -	1861	1st Aug. 1860	Purifying and cooling water and atmospheric air; "the carbonic aerial water and air purifier and cooler."
JACKSON, ROBERT - - -	2029	23rd Aug. 1860	Machinery or apparatus for spinning cotton and other fibrous substances.
JACKSON, SAMUEL PIM - -	1741	18th July 1860	Manufacture of window sashes, casements, and other frames suitable for glazing.
JACKSON, THOMAS - - -	470	21st Feb. 1860	Improvements in the action of upright pianofortes.
JACKSON, WILLIAM - - -	5	2nd Jan. 1860	Improvements in coupling apparatus for hoists for the prevention of over winding.
JACKSON, WILLIAM STERLING	1106	2nd May 1860	Manufacture of soap.
JACOBY, MORITZ - - -	1406	7th June 1860	Manufacture of bobbin net or lace in bobbin net machines.
JACOBY, MORITZ - - -	2016	21st Aug. 1860	Manufacture of twist lace in twist lace or bobbin net machinery.
JACOBY, MORITZ - - -	2348	27th Sept. 1860	Manufacture of bobbin net or twist lace in bobbin net or twist lace machines.
JACOUT, ALFRED BERTRAND -	2539	18th Oct. 1860	Water meters.
JACQUET, CLAUDE HIPPOLYTE	2903	26th Nov. 1860	An improved calendar clock.
JACQUIER, AUGUSTE NICOLAS	613	6th March 1860	Manufacture of lasts and boot-trees. (Patented by William Edward Gedge.)
JALOUREAU, ALFRED FAUVIN -	3047	12th Dec. 1860	Means or processes for holding, protecting, and insulating subterraneous telegraph wires.
JAMES, ISAAC - - -	1363	4th June 1860	Washing, wringing, and mangling machines.
JAMES, ROBERT - - -	2391	3rd Oct. 1860	Reaping and mowing machines.
JAMENON, JOHN - - -	72	11th Jan. 1860	Compressing and expanding aeriform fluids.
JAMIESON, WILLIAM - - -	2561	20th Oct. 1860	Apparatus for grinding or sharpening the cards used in carding fibrous materials.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
JAKUES, FRANK - -	2974	4th Dec. 1860	Improvements in or improved apparatus applicable to rifled or other muskets, and to other fire-arms.
JAKUES, GEORGE - -	1236	19th May 1860	An improved liquid preparation of tobacco. <i>(Patented by Alfred Vincent Newton.)</i>
JAKUES, GEORGE - -	2934	29th Nov. 1860	An improved mode of and apparatus for cooling liquids.
JAKUES, JAMES ARCHIBALD -	2934	29th Nov. 1860	An improved mode of and apparatus for cooling liquids.
JAKUES, JAMES ARCHIBALD -	2935	29th Nov. 1860	Brushes and other scrubbing and rubbing surfaces.
JAKUES, JAMES ARCHIBALD -	3157	24th Dec. 1860	Manufacture of fabrics with rubbing or friction surfaces.
JARDIN, JOSEPH - - -	1377	5th June 1860	A new or improved machinery for manufacturing bricks, tiles, and other ceramic products.
JARDIN, CHARLES - - -	195	25th Jan. 1860	Improvements in boots, shoes, and similar foot coverings, in fixing the heels and soles thereof, and in apparatus for forming and applying screws for the foregoing and other purposes. <i>(Patented by Jean Pierre Lamar.)</i>
JARVIS, JOHN STEPHEN - -	1857	31st July 1860	An improved scarf or neck tie.
JAVAL, MATHIAS PARAF - -	2205	12th Sept. 1860	Dyeing and printing textile materials and fabrics
JAY, JEAN BAPTISTE ADOLPHE	427	16th Feb. 1860	Sword and other sheaths or scabbards. <i>(Patented by William Clark.)</i>
JEFFERSON, MATTHEW - - -	636	31st March 1860	An improved construction of steam-engine applicable also to the raising of water.
JEFFERSON, RICHARD ALFRED	636	31st March 1860	An improved construction of steam-engine applicable also to the raising of water.
JEFFERY, WALTER - - -	665	5th April 1860	A more convenient and effectual method of attaching and securing brooches and such like articles; improved fastenings to be used therewith and for other purposes.
JEFFERY, WALTER - - -	2343	27th Sept. 1860	A more convenient and effectual method of attaching and securing brooches and such like articles; improved fastenings to be used therewith, and for other purposes.
JEFFREYS, EDWARD - - -	1967	14th Aug. 1860	Permanent way of railways.
JEFFREYS, JULIUS - - -	226	28th Jan. 1860	Sun blinds.
JEFFRIES, GEORGE - - -	1900	6th Aug. 1860	Machinery or apparatus for filling cartridges.
JENKIN, FLEEMING - - -	2047	25th Aug. 1860	Means of telegraphic communication.
JENKINS, GEORGE - - -	331	8th Feb. 1860	The application of the dovetail joints in iron or other metal to wooden bedsteads, couches, sofas, and other such like articles of furniture, together with metallic sides, ends, and laths securely fixed thereto by means of the dove tail joints.
JENKINS, GEORGE - - -	522	25th Feb. 1860	Children's metal cots or bedsteads.
JENKINS, GEORGE - - -	1383	5th June 1860	An improved portable arm chair.
JENKINS, JOSEPH - - -	1383	5th June 1860	An improved portable arm chair.

[Jen]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Joh]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
JENKINSON, WILLIAM - -	1972	15th Aug. 1860	Improvements in the connections or joints of the posts and frames of bedsteads and iron houses.
JENNINGS, HENRY CONSTAN- [TINE.]	323	7th Feb. 1860	Manufacture of pulp.
JENNINGS, JOSEPH PICKLES -	750	23rd March 1860	Singe plates.
JENNINGS, JOSIAH GEORGE -	418	15th Feb. 1860	Waterclosets, urinals, and lavatories.
JENSEN, ANTHON NICOLAY -	859	3rd April 1860	Improvements in brewing worts from saccharine and farinaceous substances, with a new method of retaining the aroma and better qualities of the hops, forming an infallibly keeping ale nearly white and admitting of aëration, part of which improvements is applicable to distillers' wash, vinegar making, and preserving fermentable liquors.
JERROLD, JOHN E. - - -	2435	8th Oct. 1860	Springs for railroad cars, locomotives, and carriages. (Patented by William Edward Newton.)
JESSOP, JOSEPH - - -	572	1st March 1860	Means or apparatus used in washing, wringing, and mangling fabrics.
JEUNE, WILLIAM RICHARD -	618	6th March 1860	Fire lighters.
JEUNE, WILLIAM RICHARD -	2969	4th Dec. 1860	Manufacture of Kamptulicon or covering for floors and for other purposes.
JEWELL, MARSHALL - - -	1883	3rd Aug. 1860	Wooden-soled boots and shoes or clogs. (Patented by William Edward Newton.)
JEWSBURY, JOSEPH - - -	1390	6th June 1860	Machinery for the manufacture of screws.
JEYES, JOHN - - - -	1829	27th July 1860	Manufacture of boots and shoes.
JEYES, JOHN - - - -	2927	28th Nov. 1860	Manufacture of boots and shoes.
JOBIN, JOSEPH - - - -	2020	22nd Aug. 1860	Cigarettes and mouth pieces; apparatus used in manufacturing cigarettes.
JOBSON, ROBERT - - - -	1531	23rd June 1860	Moulding articles of earthenware or porcelain.
JOBSON, ROBERT - - - -	2055	25th Aug. 1860	Apparatus used in producing moulds for casting.
JOBSON, ROBERT - - - -	2862	22nd Nov. 1860	Moulding articles of earthenware or porcelain; apparatus used therein.
JOHNSON, CECIL - - - -	69	11th Jan. 1860	Making a shoe without the use of leather.
JOHNSON, CECIL - - - -	846	2nd April 1860	Manufacture of shoes and boots.
JOHNSON, FREDERICK - -	2669	1st Nov. 1860	Fixing screw piles and moorings.
JOHNSON, JOHN - - - -	1602	3rd July 1860	Jacquard machines.
JOHNSON, JOHN HENRY -	9	3rd Jan. 1860	Furnaces and fireplaces for the better combustion of fuel. (Communicated by Nicholas François Corbin-Desboissières.)
JOHNSON, JOHN HENRY -	122	17th Jan. 1860	Improvements in the insulation of submarine electric telegraph wires. (Communicated by John M. Batchelder.)
JOHNSON, JOHN HENRY -	211	27th Jan. 1860	Inkstands. (Communicated by Howell Evans and Henry Howson.)
JOHNSON, JOHN HENRY -	222	28th Jan. 1860	Improvements in the steeling and cementation of metals. (Communicated by François Auguste Dufey.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
JOHNSON, JOHN HENRY -	223	28th Jan. 1860	Blowing-engines. (Communicated by Edouard François Fossey.)
JOHNSON, JOHN HENRY -	240	30th Jan. 1860	Hot air engines. (Communicated by Stephen Wilcox, junior.)
JOHNSON, JOHN HENRY -	335	8th Feb. 1860	Obtaining motive-power; machinery or apparatus employed therein. (Communicated by Jean Joseph Etienne Lenoir.)
JOHNSON, JOHN HENRY -	374	11th Feb. 1860	Sewing-machines. (Communicated by Samuel Comfort, junior, and Francis H. Jackson.)
JOHNSON, JOHN HENRY -	430	17th Feb. 1860	Fire-arms. (Communicated by Eugene Lefancheux.)
JOHNSON, JOHN HENRY -	431	17th Feb. 1860	Improvements in furnaces for the prevention of smoke. (Communicated by Jules Poivret.)
JOHNSON, JOHN HENRY -	438	17th Feb. 1860	Machinery or apparatus for twisting, doubling, and winding thread. (Communicated by Auguste Prouvost.)
JOHNSON, JOHN HENRY -	507	24th Feb. 1860	Improvements in reduction of friction in the working parts of machinery, applicable also to the transmission of motive-power. (Communicated by Ferdinand Schwenk.)
JOHNSON, JOHN HENRY -	508	24th Feb. 1860	Forming the fastenings of caps or stoppers for jars and bottles; machinery or apparatus employed therein. (Communicated by Thomas Rollason (Hartell and Andrew K. Hay.)
JOHNSON, JOHN HENRY -	579	1st March 1860	Gas regulators or governors. (Communicated by Adolphe Christophe.)
JOHNSON, JOHN HENRY -	588	3rd March 1860	Manufacture of artificial fuel. (Communicated by Elijah Day Williams, and John Reed Bostick.)
JOHNSON, JOHN HENRY -	600	5th March 1860	An improved ruffle and sewing-machine for producing the same, applicable also to ordinary stitching. (Communicated by George B. Arnold and Abbey H. Price.)
JOHNSON, JOHN HENRY -	679	14th March 1860	Cleaning rice; machinery or apparatus employed therein. (Communicated by Silas Dodson, and Alpheus Fobes.)
JOHNSON, JOHN HENRY -	713	17th March 1860	Apparatus for controlling refractory horses. (Communicated by Henry Crane.)
JOHNSON, JOHN HENRY -	773	24th March 1860	Production of colours for dyeing or printing. (Communicated by L. et É. Boilley freres.)
JOHNSON, JOHN HENRY -	783	26th March 1860	Shaping metals; machinery or apparatus employed therein. (Communicated by Jean Baptiste Vin.)
JOHNSON, JOHN HENRY -	819	29th March 1860	Chronometers. (Communicated by Louis François Clément Bréguet.)
JOHNSON, JOHN HENRY -	874	5th April 1860	A new metallic alloy. (Communicated by Messieurs Charles Noel and Company.)
JOHNSON, JOHN HENRY -	890	9th April 1860	Pumps for compressing elastic fluids. (Communicated by Germain Sommeiller.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
JOHNSON, JOHN HENRY	- 981	17th April 1860	Caloric engines. (Communicated by Milton A. Whipple.)
JOHNSON, JOHN HENRY	- 1053	26th April 1860	Portable bedsteads; mattresses to be used therewith. (Communicated by Eugene Etienne Barbier St. Ange.)
JOHNSON, JOHN HENRY	- 1134	7th May 1860	Pipe couplings. (Communicated by Messrs. Button and Blake.)
JOHNSON, JOHN HENRY	- 1265	22nd May 1860	Machinery or apparatus employed in spinning. (Communicated by Edmund Victory.)
JOHNSON, JOHN HENRY	- 1313	28th May 1860	Ruffles or gathered fabrics; apparatus employed in their manufacture. (Communicated by George B. Arnold and Alfred Arnold.)
JOHNSON, JOHN HENRY	- 1429	11th June 1860	Governors or regulators for steam-engines. (Communicated by Narcisse Duvoir.)
JOHNSON, JOHN HENRY	- 1540	25th June 1860	Improvements in hydraulic apparatus for obtaining motive-power and for raising water. (Communicated by Louis Coignard.)
JOHNSON, JOHN HENRY	- 1744	18th July 1860	A new colouring matter, and the means of obtaining the same. (Communicated by Louis Henry Obert.)
JOHNSON, JOHN HENRY	- 1748	19th July 1860	Manufacture or production of white lead; machinery or apparatus employed therein. (Communicated by Georges Hyacinthe Ozouf.)
JOHNSON, JOHN HENRY	- 2060	27th Aug. 1860	Manufacture of sheet tin; machinery or apparatus employed therein. (Communicated by François Paulin Eugène Massière.)
JOHNSON, JOHN HENRY	- 2096	30th Aug. 1860	Manufacture of railway chairs. (Communicated by James H. Swett.)
JOHNSON, JOHN HENRY	- 2105	31st Aug. 1860	Treatment of zinc and other ores; apparatus employed therein. (Communicated by Adrien Muller and Alexandre Lencauchez.)
JOHNSON, JOHN HENRY	- 2127	3rd Sept. 1860	Manufacture of moulds and cores for the casting of cylindrical articles; machinery or apparatus employed therein. (Communicated by Homer Parmelee.)
JOHNSON, JOHN HENRY	- 2224	14th Sept. 1860	Apparatus for raising or lowering and weighing heavy bodies. (Communicated by Louis Vernay.)
JOHNSON, JOHN HENRY	- 2322	24th Sept. 1860	Machinery or apparatus for washing and wringing clothes and similar articles. (Communicated by Josee Johnson and Elliott Dickerman.)
JOHNSON, JOHN HENRY	- 2347	27th Sept. 1860	Improvements in forging and rolling metals applicable to the manufacture of wheels, spades, shovels, axles, buffers and other articles of wrought iron. (Communicated by Messrs. H. Petin, Gaudet & Co.)
JOHNSON, JOHN HENRY	- 2441	8th Oct. 1860	Railways or tramways; carriage wheels to be used thereon. (Communicated by William Wharton junior.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
JOHNSON, JOHN HENRY -	2492	13th Oct. 1860	Production of colours for dyeing and printing. (Communicated by Louis Joseph Troost.)
JOHNSON, JOHN HENRY -	2577	22nd Oct. 1860	Improvements in apparatus for measuring the flow of liquids, partly applicable to ordinary water cisterns. (Communicated by Augustin Marie Herland.)
JOHNSON, JOHN HENRY -	2656	13th Oct. 1860	Rotatory engines. (Communicated by Edward Scheutz.)
JOHNSON, JOHN HENRY -	2849	21st Nov. 1860	Manufacture of boots and shoes, and of a new material to be employed therein, which material is applicable to various other useful purposes. (Communicated by Messieurs. Dufay, Brothers, and Company.)
JOHNSON, JOHN HENRY -	2886	24th Nov. 1860	Sewing-machines. (Communicated by the Grover and Baker Sewing Machine Company.)
JOHNSON, JOHN HENRY -	2978	4th Dec. 1860	Construction of clothes dryers, or folding racks for airing and drying clothes. (Communicated by John Ward, junior.)
JOHNSON, JOHN HENRY -	3014	8th Dec. 1860	Apparatus for applying capsules to bottles. (Communicated by Jules Mathieu.)
JOHNSON, JOHN HENRY -	3032	10th Dec. 1860	Electric apparatus for striking the hours on bells. (Communicated by François Guichend.)
JOHNSON, JOHN HENRY -	3113	18th Dec. 1860	An improved compound felled and textile fabric. (Communicated by Messrs. Imbs, Brothers and Co.)
JOHNSON, JOHN HENRY -	3142	21st Dec. 1860	Magneto-electric machines. (Communicated by Hypolite Worms.)
JOHNSON, JOHN HENRY -	3164	26th Dec. 1860	Instruments for assisting the sense of hearing. (Communicated by Charles Grafton Page.)
JOHNSON, JOHN HENRY -	3165	26th Dec. 1860	Smoothing irons. (Communicated by Antoine Jules Alfred Cavelier de Mocomble.)
JOHNSON, JOSEE -	2322	24th Sept. 1860	Machinery or apparatus for washing and wringing clothes and similar articles. (Patented by John Henry Johnson.)
JOHNSON, THOMAS -	1286	24th May 1860	Machines for washing bottles and jars.
JOHNSON, THOMAS -	2389	3rd Oct. 1860	An improved tobacco pipe.
JOHNSON, WILLIAM -	1427	11th June 1860	Improvements in hydraulic or other like presses, and in the apparatus connected therewith for extracting oils from seeds.
JOHNSON, WILLIAM BECKETT	1151	9th May 1860	Steam-engines and boilers; apparatus connected therewith.
JOHNSTON, JAMES -	3145	22nd Dec. 1860	Apparatus for withdrawing corks from bottles.
JOHNSTON, THOMAS ALEX- [ANDER.	2645	29th Oct. 1860	Looms. (Patented by William Edward Newton.)
JOHNSTON, WILLIAM -	2117	1st Sept. 1860	Taps or valves.
JOLLY, LOUIS JULIEN OLIVIER	2437	8th Oct. 1860	Means of winding up and setting watches. (Communicated by Felix Berthet.)
JOLY, PIERRE FRANÇOIS -	2682	2nd Nov. 1860	Steam generators. (Patented by William Clark.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
JONES, ABRAHAM - -	939	14th April 1860	Machinery or apparatus for making rivets, screw blanks, and other such articles.
JONES, DAVID - -	2294	20th Sept. 1860	An improved method of and apparatus for raising water and other liquids.
JONES, EDWARD TRYGARN -	1187	14th May 1860	Roasting jacks.
JONES, EMANUEL - -	3068	13th Dec. 1860	Rifling small arms and ordnance.
JONES, GILBERT DANIEL -	1304	26th May 1860	Manufacture of sand, emery, and glass papers and cloth; machinery employed therein.
JONES, HENRY - -	838	31st March 1860	Wet gas meters.
JONES, HENRY - -	1532	23rd June 1860	Waterclosets.
JONES, HENRY - -	1782	24th July 1860	Rails for railways.
JONES, JOHN - -	838	31st March 1860	Wet gas meters.
JONES, JOHN MASTERS -	853	3rd April 1860	An improved apparatus for generating steam.
JONES, JOSIAH, junior -	2097	30th Aug. 1860	Gun carriages.
JONES, MEREDITH - -	3012	8th Dec. 1860	Apparatuses for preparing the edges of discs of metal for coin.
JONES, MICHAEL - -	2405	4th Oct. 1860	Improvements in rifles and other fire-arms, whereby to insure greater accuracy in the use of the sights.
JONES, RICHARD - -	1859	31st July 1860	Means or apparatus to be used in effecting the preservation of animal and vegetable substances.
JONES, THOMAS MORETON -	2630	17th Nov. 1860	An improved apparatus for containing igniting, and holding wax tape and other matches.
JONES, WILLIAM - -	2719	6th Nov. 1860	Improvements in machines or presses, and apparatus attached thereto for stamping or embossing paper or other substances.
JONES, WILLIAM EDWARD -	2327	25th Sept. 1860	Axles for railway carriages and other purposes. (Patented by John Robinson Porter.)
JONES, WRIGHT - -	1322	29th May 1860	Machinery or apparatus for doubling or cutting woven fabrics, paper, and other similar materials.
JONGH, CHARLES DE - -	968	17th April 1860	An improved mode of mounting the needles, points, and guides used in knitting and lace machinery.
JONGKINDT, GERHARDUS HEN- [DRICUS CONINCK.	674	14th March 1860	Method of and apparatus for making cakes and purified or refined oil out of cotton seed.
JORDAN HENRY - -	2989	6th Dec. 1860	Construction of ships or other vessels.
JORDAN, JOSEPH - -	2019	22nd Aug. 1860	An improved machine for grinding or reducing paper stuff to pulp, and sizing the same. (Patented by Henry Martyn Clarke.)
JORDAN, JOSEPH, junior -	792	27th March 1860	A new and useful or improved machine for the making and sizing of pulp used in the manufacture of paper. (Patented by Henry Martyn Clarke.)
JORDAN, REUBEN JACOB -	1200	15th May 1860	Pills.
JORDESON, THOMAS POWDITCH	1656	10th July 1860	Life boats.
JOSEPH, ALEXANDRE - -	1103	2nd May 1860	Manufacture of bolts. (Patented by William Edward Gedge.)
JOSLIN, GEORGE - -	1416	8th June 1860	Reaping machines.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
JOSLIN, HENRY CRUSH -	1418	8th June 1860	Reaping machines.
JOSLIN, JOHN - -	1418	8th June 1860	Reaping machines.
JOSSA, FERDINAND - -	258	31st Jan. 1860	Manufacture of sal ammoniac from small and refuse coals, and from the gas generated in the manufacture of coke.
JOURDAN, NAPOLEON - -	2495	13th Oct. 1860	Lubricating apparatus. (Patented by William Clark.)
JOURJON, FLURY - -	2184	7th Sept. 1860	An improved lavatory. (Patented by Charles Stevens.)
JOWETT, HENRY ALFRED -	2836	19th Nov. 1860	Improvements in the method of heating or firing ovens for the manufacture of pottery and porcelain by means of gas, and in apparatus connected therewith.
JOY, DAVID - - -	2668	1st Nov. 1860	Improvements in the valves of steam hammers which are also applicable to other purposes.
JOYCE, JAMES - - -	1529	23rd June 1860	A new machine or improved mechanical arrangements or combinations for the manufacture of stockings, vests, and other articles of hosiery.
JUCKES, JOHN - - -	1365	4th June 1860	Pipes for smoking tobacco.
JUCKES, JOHN - - -	2783	13th Nov. 1860	Stoves and fireplaces.
JUDKINS, CHARLES TIOT -	1690	13th July 1860	Sewing-machines. (Partly communicated by Joseph Wetherby Bartlett.)
JUENGST, GEORGE - -	2340	26th Sept. 1860	Sewing-machines. (Patented by Joseph McCrossan.)
JULLIENNE, MARIE JOSEPHINE [ELISABETH.]	656	10th March 1860	An improved bath belt to be applied in the bathing vessels, and in electrical apparatus connected therewith.
JULLION, JOHN LOUIS -	2520	16th Oct. 1860	Manufacture of paper.
JULLION, JOHN LOUIS -	2521	16th Oct. 1860	Improved machinery for making fences. (Communicated by Archibald Kelly.)
JULLION, JOHN LOUIS -	2545	18th Oct. 1860	Paper making machinery. (Communicated by Mr. John Hoyt.)
JUMELAIS, ANGE - - -	1762	20th July 1860	Using plenum to create an unlimited and almost gratuitous motive-power and also the means by which the same is effected, being a new principle to create an illimited motive-power.
JUST, LOUIS ARMAND LE [BLANC DE ST.]	29	5th Jan. 1860	An improved machine for cutting soft and hard stones in open quarries.
JUTTEAU, AIGNAN - - -	1514	22nd June 1860	A new system of plating and plastering houses and public buildings with natural stones.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
<b>K.</b>			
KABERRY, LEONARD - -	1811	25th July 1860	Machinery or apparatus for preparing, spinning, and doubling cotton and other fibrous materials.
KANE, GREGORY - - -	1410	8th June 1860	Making or fabricating in wood, metal, or other suitable substances bedsteads capable of being collapsed into a convenient size and form for transport as personal luggage:—"Kanes' portable folding bedstead."
KAY, JEREMIAH - - -	2591	24th Oct. 1860	Window frames and sashes.
KAY, JOHN - - -	2602	25th Oct. 1860	"Self acting mules" for spinning cotton and other fibrous substances.
KEATES, THOMAS WILLIAM -	1480	18th June 1860	An improved mode of separating carbonic acid gas from the gaseous products derived from the distillation of peat and other vegetable matter.
KEBLE, THOMAS HARMAN -	2860	22nd Nov. 1860	Fire-arms.
KEEN, RICHARD EDWARD -	2958	3rd Dec. 1860	Cocks, taps, valves, and other apparatus for stopping and regulating the flow of liquids, steam, and gas.
KEEN, WILLIAM - - -	2036	24th Aug. 1860	Castors.
KEIFLER, ADOLPH - - -	1657	10th July 1860	An improved steam-boiler. (Patented by Marc Antoine François Mennons.)
KEIGHLEY, SUGDEN - -	471	21st Feb. 1860	The employment of a certain fibre in the manufacture of textile fabrics not hitherto used for this purpose.
KEIRBY, EDWARD - - -	2871	23rd Nov. 1860	Covering, insulating, and preserving telegraphic wires and cables.
KELLER, DR. GEORGE ADOLPH	2818	16th Nov. 1860	Machinery or apparatus for folding and for folding and stitching sheets of paper and other material. (Patented by Rudolph Bodmer.)
KELLER & Co. - - -	2706	5th Nov. 1860	Travelling-bags. (Patented by George Davies.)
KELLY, ARCHIBALD - - -	2521	16th Oct. 1860	Improved machinery for making fences. (Patented by John Louis Jullion.)
KEMP, EBENEZER - - -	779	26th March 1860	Steam engines and boilers.
KEMP, HENRY - - -	1142	9th May 1860	Preserving wood, leather, iron, and other substances.
KEMP, JOHN - - -	669	13th March 1860	Water and steam gauges for steam-boilers.
KENDALL, WILLIAM - - -	1489	20th June 1860	Machinery or apparatus for making gas burners.
KENDRICK, ISAIAH - - -	680	14th March 1860	Steam-boilers.
KENNARD, WILLIAM - - -	2420	6th Oct. 1860	Hanging window sashes.
KENNEDY, JAMES - - -	1032	25th April 1860	Construction of sliding sash frames or windows.
KENNEDY, THOMAS - - -	2753	8th Nov. 1860	Projectiles for fire-arms and ordnance.
KENNY, JOHN - - -	1781	20th July 1860	Sewing-machines.
KENT, ROBERT THOMAS - -	2597	24th Oct. 1860	An improved method of obtaining compounds of nitrogen.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
KENYON, JAMES - - -	2589	24th Oct. 1860	Looms for weaving.
KERAVENAN, FRANCIS [BERNARD DE.	2530	17th Oct. 1860	Lamps. (Patented by Alfred Vincent Newton.)
KERR, ANDREW - - -	295	4th Feb. 1860	Jacquard machines.
KERSHAW, GEORGE - - -	2046	24th Aug. 1860	Construction of medico-electric surfaces.
KERSHAW, JOSEPH - - -	906	11th April 1860	Means or apparatus used in weaving.
KERSHAW, THOMAS - - -	1476	18th June 1860	Apparatus for imitating various fancy woods, marbles, granites, and stencillings.
KERSOLON, VISCOUNT DE -	1731	17th July 1860	Locks or fastenings. (Patented by Edward Loysel.)
KESSELER, C. - - -	2941	30th Nov. 1860	Manufacture of metal tubes. (Patented by Edward Thomas Hughes.)
KESSELMAYER, CHARLES [WILLIAM.	1987	16th Aug. 1860	Manufacture of velvets and velveteens.
KESSELMAYER, CHARLES [WILLIAM.	2993	6th Dec. 1860	Treatment of velvets, velveteens, and other fabrics on which there are floated weft threads to be cut.
KIBBIN, ROBERT DICKSON M <sup>c</sup>	1969	14th Aug. 1860	An improved water-proof and non-inflammable material applicable to roofing and to other purposes for which felt, tarpauling, oil-cloth, and such like materials are now used.
KIEFFER, FRANÇOIS ANTOINE -	191	25th Jan. 1860	Improvements in fabrics suitable for straps for driving machinery and for other purposes.
KIENTZLE, FRANZ XAVIER -	1930	9th Aug. 1860	Treatment of food for cattle; machinery or apparatus employed therein. (Patented by Anton Neumann.)
KIENTZLE, FRANZ XAVIER -	1931	9th Aug. 1860	Hanging and fastening of doors, lids, and other hinged covers. (Patented by Anton Neumann.)
KILBY, GEORGE THOMAS -	2637	29th Oct. 1860	New or improved fastenings for articles of dress and for fastening belts and bands generally.
KILNER, CALEB - - -	2079	28th Aug. 1860	Manufacture of glass bottles, and the apparatus connected therewith.
KILNER, GEORGE - - -	2079	28th Aug. 1860	Manufacture of glass bottles, and the apparatus connected therewith.
KILNER, JOHN - - -	2079	28th Aug. 1860	Manufacture of glass bottles, and the apparatus connected therewith.
KILNER, WILLIAM - - -	2079	28th Aug. 1860	Manufacture of glass bottles, and the apparatus connected therewith.
KIND, CARL - - -	2325	25th Sept. 1860	Pianofortes.
KINDER, ARTHUR - - -	3088	15th Dec. 1860	Machinery or apparatus for cutting wood.
KING, HENRY - - -	1183	14th May 1860	Certain improvements in marine steam-engines, part of which is applicable to ships' pumps.
KING, JOHN - - -	1477	18th June 1860	A new or improved rope porter to be used in steam ploughing or cultivating.
KING, JOSEPH JACKSON - -	2242	15th Sept. 1860	Improvements in binding and folding guides employed in sewing-machines.
KINGSLEY, JEFFRIES - -	1399	7th June 1860	Testing screw propellers and paddle-wheels.
KINGSLEY, JEFFRIES - -	1798	25th July 1860	Improvements in railways, and in carriages to be used thereon.
KINGSTON, WILLIAM HOLLAND	987	20th April 1860	A coke furnace for the distillation of coals. (Communicated by Aimé Bertholon.)

[Kin]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Kop]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
KINIPPLE, WALTER ROBERT -	2147	5th Sept. 1860	An improvement in water closets and in flushing-tanks or apparatuses.
KINNIBURGH, JOHN - -	1844	31st May 1860	Manufacture or production of metal pipes and other generally similar tubular articles.
KINSEY, HENRY - - -	62	10th Jan. 1860	Improvements in means or apparatus employed in the manufacture of bonnet and cap fronts, rouches and other articles of millinery, parts of which improvements are also applicable in the treatment of lace for other purposes.
KIRK, J. T. VAN - - -	2241	15th Sept. 1860	Improvements in lamps for burning coal oil and other like combustible fluids, part of which improvements is applicable to gas fittings. (Patented by George Davies.)
KIRRAGE, WILLIAM - -	2091	30th Aug. 1860	An invention for the amalgamation of certain materials forming a plastic composition applicable to works of the fine arts, building purposes, imitations of marbles, ancient carvings and various other uses.
KLEIN, JOSEPH LOUIS EDOUARD	20	4th Jan. 1860	A rotatory vice applicable for the manufacture of shoes and all objects of art or industry generally made by hand.
KLEINFELDER, JOHN JOSEPH [CONRAD.]	2181	8th Sept. 1860	Carriages and harness for horses; means of attaching harness to carriages.
KLEIST, FERDINAND WENDE- [LIN.]	1317	29th May 1860	Manufacture of lubricants. (Patented by Christian Schiele.)
KLINTIN, JOHAN FREDRIK -	1893	4th Aug. 1860	Ships' logs.
KNAPP, IVERSON WILSON -	2069	27th Aug. 1860	Bakers' ovens. (Patented by Alfred Vincent Newton.)
KNIGHT, JOHN ADAMS - -	807	29th March 1860	Spring bed-bottoms. (Partly communicated by Philip Ulmer.)
KNIGHT, JOHN ADAMS - -	2402	4th Oct. 1860	A new or improved mode of inflating air-mattresses and air-cushions. (Communicated by John Mellier.)
KNIGHT, JOHN ADAMS - -	2433	8th Oct. 1860	An improved lathe for ribbon-loom. (Communicated by Etienne Calonnier-Peyron.)
KNIGHT, JOHN ADAMS - -	2639	29th Oct. 1860	A new system of photographic or daguerrean apparatus or objective:—Korn's polygraph. (Communicated by Charles Felix Korn.)
KNOWLES, JAMES - - -	498	24th Feb. 1860	Machinery or apparatus for obtaining motive-power.
KNOWLES, JOHN - - -	39	6th Jan. 1860	Looms for weaving.
KNOWLES, LUCIUS J. - -	877	5th April 1860	An improved arrangement of parts for supplying steam to steam-engines. (Patented by Alfred Vincent Newton.)
KNOWLES, MARK - - -	284	3rd Feb. 1860	Beams for warping, sizing, dressing and weaving machines.
KNOWLES, THOMAS - - -	498	24th Feb. 1860	Machinery or apparatus for obtaining motive-power.
KNOWLES, WILLIAM - - -	99	14th Jan. 1860	Machinery for carding cotton and other fibrous materials.
KOLB, GEORGE - - -	514	25th Feb. 1860	Boring-apparatus. (Patented by Edward Thomas Hughes.)
KOPP, CHARLES EMILE - -	3150	22nd Dec. 1860	Manufacture of colouring matters. (Patented by William Clark.)

[Kor]

## ALPHABETICAL INDEX OF PATENTEEES

[Lac]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
KORN, CHARLES FELIX - -	2639	29th Oct. 1860	A new system of photographic or daguerrean apparatus or objective:—Korn's polyograph. (Patented by John Adams Knight.)
KREEFT, SIEGERICH CHRISTOPHER.	132	18th Jan. 1860	Permanent way of railways. (Communicated by Carl Von Etzel.)
KROTKOFF, SERGE - - -	1626	5th July 1860	Apparatus for employing the electric light.
KRUTZSCH, WILLIAM - -	566	1st March 1860	Cartridges and projectiles.
KRUTZSCH, WILLIAM - -	1210	17th May 1860	Mortars.
KÜHNE, GUSTAV ARNOLD -	1301	26th May 1860	Improved methods of obtaining artificial light; apparatus and burners connected therewith. (Patented by Edward Thomas Hughes.)
KUKLA, FRANCIS XAVIER -	1878	3rd Aug. 1860	An improved self-regulating gas-burner.
KUKLA, FRANCIS XAVIER -	2523	17th Oct. 1860	Apparatus for heating stoves by gas.
KUNKLER, ADOLPHE - -	463	20th Feb. 1860	Stamping-presses. (Patented by Richard Archibald Brooman.)
KÜNKLER, ADRIEN - - -	936	14th April 1860	An improved setting for lamp reflectors. (Patented by Mark Antoine François Mennons.)
KÜNKLER, GUSTAV - - -	936	14th April 1860	An improved setting for lamp reflectors. (Patented by Mark Antoine François Mennons.)
KUNSTMANN, ROBERT - -	2288	20th Sept. 1860	An improved apparatus for lubricating the frictional surfaces of machinery. (Communicated by Thomas Rominger.)
KYLE, ALEXANDER - - -	3054	12th Dec. 1860	Machinery or apparatus for propelling ships or vessels and boats.

## L.

LA FERTÉ, FERDINAND JEAN [JOUBERT DE.]	149	20th Jan. 1860	Improvements in reproducing photographic and other pictures, engravings, prints, devices and designs on the surfaces of glass, ceramic and other substances requiring to be fired to fix the same thereon. (Partly communicated by Henry Garnier.)
LA FORGE, SAMUEL - - -	1708	14th July 1860	An improved manufacture of waterproof leather. (Patented by William Edward Newton.)
LA MARE, JOHN DE - - -	2579	23rd Oct. 1860	An improved lubricating composition to be used with other lubricators.
LACAIRE, GUILLAUME - -	2588	24th Oct. 1860	An improved penholder.
LACAZE, ——— - - - -	3035	11th Dec. 1860	An impermeable anti-sulphuric coating for leather. (Patented by Charles Stevens.)
LACOMME, AUGUSTE - - -	1117	4th May 1860	An apparatus, The Pneumato liquid mover, applicable to all branches of industry which require a first prime mover.

[Lac]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Lan

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
LACROISADE, JEAN HECTOR [CHAMBON.]	2033	23rd Aug. 1860	An improved apparatus for heating tailors' irons and other irons, also for cooking and other heating purposes, with irons adapted to be used therewith.
LACY, AUGUSTUS DACRE -	2159	7th Sept. 1860	Machinery and implements for ploughing and cultivating land.
LAINE, J. B. L. - - -	2058	27th Aug. 1860	Salt cellars, pepper-casters, and similar utensils. (Patented by Marc Antoine François Menons.)
LAIRD, JOHN - - -	700	16th March 1860	Effecting the exhaustion of steam-engine condensers.
LAIRE, GEORGES DE - -	1800	26th May 1860	A new process for manufacturing red and violet colouring matter.
LAKE, WILLIAM - - -	1767	21st July 1860	An improved button or fastening for iron bedsteads and other purposes.
LAKIN, ROBERT - - -	828	30th March 1860	Machines for spinning and doubling cotton and other fibrous substances.
LAMAR, JEAN PIERRE - -	195	25th Jan. 1860	Improvements in boots, shoes, and similar foot coverings, in fixing the heels and soles thereof, and in apparatus for forming and applying screws for the foregoing and other purposes. (Communicated by Charles Jarrin.)
LAMBE, FREDERICK - -	2040	24th Aug. 1860	Construction of certain parts of oil lamps and other lamps. (Communicated by Henry Coulter.)
LAMBERT, BENJAMIN - -	1633	6th July 1860	Treating printed paper to remove the ink and to obtain pulp; treating printers' rags to remove the ink therefrom.
LAMBERT, JEAN BAPTISTE [ACHILLE.]	2659	31st Oct. 1860	A life-preserver.
LAMBERT, THOMAS - -	521	25th Feb. 1860	Steam and other valves or cocks.
LAMBERT, WILLIAM - -	2951	1st Dec. 1860	Horses' shoes.
LAMING, RICHARD - - -	1586	30th June 1860	Purifying certain gases and liquids from sulphuretted hydrogen.
LANCASTER, CHARLES WILLIAM	1357	2nd June 1860	Cannon and other ordnance.
LANCASTER, CHARLES WILLIAM	1805	25th July 1860	Improvements in the manufacture of plates for coating or covering and strengthening ships and other structures, and in fixing the same.
LANCASTER, CHARLES WILLIAM	2993	5th Dec. 1860	Sights for rifles and other fire-arms.
LANCASTER, JOHN - - -	1447	13th June 1860	Whet stones commonly called scythe stones.
LANCASTER, JOHN - - -	2709	5th Nov. 1860	An improved mowing and reaping machine.
LANCELOTT, JAMES - - -	1894	4th Aug. 1860	Machinery or apparatus for the manufacture of small metallic chains; manufacture of such chains.
LANDIS, CHARLES K. - -	2436	8th Oct. 1860	Treatment of ores and coal. (Patented by William Edward Newton.)
LANDRIN, HENRI - - -	160	21st Jan. 1860	Washing ores and minerals. (Partly communicated by Henri Charles Landrin.)
LANDRIN, HENRI CHARLES -	160	21st Jan. 1860	Washing ores and minerals. (Patented by Henri Landrin and Louis Joseph Soulé.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
LANDSBERG, EDOUARD, junior	387	13th Feb. 1860	Improvements in buttons, studs, or other similar fastenings for wearing-apparel or other purposes.
LANDWERLIN, BERNARD -	416	15th Feb. 1860	Manufacture of fabrics suitable for carpets, hangings, furniture stuffs and the like. (Patented by Richard Archibald Brooman.)
LANE, JOSEPH - - -	1534	23rd June 1860	Apparatus for grinding edge and other cutting tools.
LANE, JOSEPH - - -	1604	3rd July 1860	Screw cutting lathes.
LANE, T. WILSON - - -	876	5th April 1860	Construction of pressure gauges. (Patented by Alfred Vincent Newton.)
LANG, BENOIT - - -	101	14th Jan. 1860	An improved method or apparatus for obtaining a continuous stream of water or other fluid particularly adapted for pumps and for administering injections and other such like purposes.
LANG, JOHN - - -	526	25th Feb. 1860	Targets.
LANG, JOSEPH - - -	550	28th Feb. 1860	Looms for weaving.
LANG, TIMOTHY HILL - -	476	22nd Feb. 1860	Digestors for dissolving quartzose rocks. (Patented by William Edward Newton.)
LANGEN, EUGEN - - -	229	28th Jan. 1860	Steam-boiler and other furnaces.
LANGENARD, FRÉDÉRIC PIERRE	769	24th March 1860	An improved means of closing or filling metallic joints. (Patented by Marc Antoine François Menons.)
LANGFORD, JOHN - - -	345	8th Feb. 1860	Cooling liquids.
LANGMAN, JOHN - - -	661	12th March 1860	An improved cartridge and method of manufacturing the same.
LANGSHAW, WILLIAM - -	2705	5th Nov. 1860	Means or method of polishing or finishing yarns or threads.
LANGSTEIN, JAMES - -	793	27th March 1860	Manufacture of tobacco pipes.
LAPHAM, RUFUS - - -	1535	23rd June 1860	An improved churn. (Patented by David Crosman Dinsmore.)
LAPOINTE, ANTOINE - -	1355	1st June 1860	Punching the leaves of cheque and other books and other papers. (Patented by Thomas Frederick Newell.)
LARCHAR, EDWIN BLAKE -	2309	21st Sept. 1860	An improved mode of producing relief printing plates, blocks, and cylinders. (Patented by Alfred Vincent Newton.)
LARCHAR, EDWIN METCALF -	2309	21st Sept. 1860	An improved mode of producing relief printing plates, blocks, and cylinders. (Patented by Alfred Vincent Newton.)
LARDIN, VICTOR - - -	1034	25th April 1860	Water pumps.
LARGER, JEAN - - -	2035	24th Aug. 1860	Turbinical hydraulic apparatus. (Patented by William Edward Gedge.)
LARK, JAMES - - -	1966	14th Aug. 1860	Grinding cement and other substances; machinery or apparatus connected therewith.
LARKINS, STEPHEN NORWOOD	1199	15th May 1860	Improved bathing apparatus.
LARMUTH, ALFRED AUGUSTUS	243	31st Jan. 1860	Certain improvements in "healds" employed in looms for weaving.
LANSDELL, LAWSON - -	1836	28th July 1860	Manufacture of harrows.
LANSLEY, JOHN - - -	1092	30th April 1860	Harrows.
LASERRE, — - -	2	2nd Jan. 1860	An improved safety lock. (Patented by José Iwis.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
LÄSERSON, LOUIS DIODOR -	24	4th Jan. 1860	Production of motive-power; apparatus connected therewith. (Patented by Marc Antoine François Menons.)
LATTA, MARGARET JAKRETT [LAURIE.	1559	27th June 1860	Treatment of various substances for the purpose of rendering the same noninflammable.
LAUDENMÜLLER, ANTOINE -	1755	19th July 1860	Valve apparatus for regulating the flow of steam and other fluids. (Patented by William Clark.)
LAUNAY, CHARLES THEODULE	301	4th Feb. 1860	An improved valve or cock for regulating or stopping the passage of gas, steam, water, or other fluids.
LAUNAY, CHARLES THEODULE	302	4th Feb. 1860	An improved apparatus for carburating hydrogen or other gas for illuminating purposes.
LAUNAY, CHARLES THEODULE	2220	14th Sept. 1860	Treating coal naphtha; apparatus employed therein.
LAURENS, CHARLES PIERRE [PRICE.	153	21st Jan. 1860	Manufacture of chlorine.
LAURENT, LERMUSIAUX -	2207	13th Sept. 1860	Construction of safety or Davy lamps. (Patented by James Wright.)
LAURENT, VICTOR HIPPOLYTE	2290	20th Sept. 1860	Machinery or apparatus for forging nails, screws, bolts, rivets, and railway spikes.
LAUTH, BERNARD - -	690	15th March 1860	Machinery or apparatus for rolling railroad rails, bars, beams and other such articles. (Communicated by John Fritz.)
LAUTH, BERNARD - -	990	19th April 1860	Machinery or apparatus for straightening metal bars, rails, rods, tubes, plates, and other similar articles.
LAUTH, CHARLES - -	176	24th Jan. 1860	Manufacture of certain colouring matters by the oxidation of salts of aniline and other salts of a similar nature. (Patented by Edward Joseph Hughes.)
LAUTH, CHARLES - -	2432	8th Oct. 1860	Preparation of certain colouring matters, and also a process of printing and dyeing woven fabrics, yarns and other substances. (Patented by Edward Joseph Hughes.)
LAVATER, MANUEL LEOPOLD [JONAS.	2824	16th Nov. 1860	Portable or syphon filters.
LAVENAS, PIERRE - -	445	17th Feb. 1860	Obtaining motive-power by compressed air and by its successive and ascending pressures: apparatus employed therein. (Communicated by Louis Brunier.)
LAVENDER, EDWARD - -	1379	5th June 1860	Improvements in destructive and vinous distillation.
LAVENDER, ROBERT - -	1379	5th June 1860	Improvements in destructive and vinous distillation.
LAW, THOMAS - -	725	20th March 1860	Reaping and mowing machines.
LAWSON, HENRY - -	2622	27th Oct. 1860	Improvements in machinery for putting cop tubes on to the spindles of mules for spinning, and in apparatus for supplying the cop tubes to the said machinery.
LE CHATELIER, LOUIS -	2654	30th Oct. 1860	Production of alumina and salts of alumina. (Patented by William Edward Newton.)
LE RICHEUX, LEWIS - -	1785	24th July 1860	Improvements in the means of attaching buttons or studs to articles of clothing or other similar articles, and in the buttons or studs to be adapted thereto.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
LEA, EDMUND - - -	329	7th Feb. 1860	Manufacture of iron and steel tubes.
LEACH, JOHN - - -	398	14th Feb. 1860	Pressing, ornamenting, and finishing woollen and other fabrics; machinery or apparatus employed therein.
LEATHAM, WILLIAM - -	399	14th Feb. 1860	Means or apparatus for governing steam-engines.
LECOCQ, JEAN FRANÇOIS JOSEPH	646	10th March 1860	An improved calcareous varnish for coating wood, metals, paper, strips, and other substances. (Patented by Jozé Luis.)
LECOMTE-ALLIOT, JEAN BAPTISTE.	2915	28th Nov. 1860	A machine for waxing and rubbing apartments.
LECOUPEUR, VICTOR EUGÈNE	477	22nd Feb. 1860	A new or improved system of filter.
LEE, DENNIS - - -	1505	21st June 1860	Means or machinery for preparing and polishing marble.
LEE, JOSEPH - - -	529	25th Feb. 1860	Manufacturing of crank shafts from round or square iron or steel.
LEE, LEE - - -	1122	5th May 1860	Finishing woven fabrics.
LEEDS, LEWIS WALKER -	1840	31st May 1860	Application of steam to the warming of buildings and apartments; apparatus therefor. (Patented by Alfred Vincent Newton.)
LEEMING, JOHN - - -	609	6th March 1860	Looms for weaving.
LEES, JOHN - - -	638	9th March 1860	Construction of oil cans.
LEES, JOSIAH - - -	1235	19th May 1860	Improvements in the manufacture of swivels, hooks and rings, for attaching and securing watches, chains, or jewellery, parts of which improvements are applicable to key-rings, ear-rings and other similar articles.
LEFANCHEUX, EUGENE -	430	17th Feb. 1860	Fire-arms. (Patented by John Henry Johnson.)
LÉGÉ, — - - -	1463	15th June 1860	Improvements in desiccating substances, and in neutralizing or retaining any fetid gases which may be evolved in the process. (Patented by Richard Archibald Brooman.)
LEGG, ROBERT - - -	632	8th March 1860	Appliances for heating twist or spun tobacco during the process of pressing.
LEGRIS, — - - -	21	4th Jan. 1860	Improvements applicable to nibs or burners for gas. (Patented by George Davies.)
LEGROS, ARTHUR - - -	1222	17th May 1860	An improved mowing-machine. (Patented by Richard Archibald Brooman.)
L'HEUREUX, — - - -	1556	26th June 1860	Improved machinery for the manufacture of lace or bobbin net. (Patented by William Edward Newton.)
LEIGH, LEWIS - - -	569	1st March 1860	Machinery for sizing raw silk or other threads, and for cleaning the same preparatory to the sizing operation. (Patented by William Clark.)
LEIGH, WALTER - - -	2891	24th Nov. 1860	An improved indicator for railway carriages.
LELANDAIS, ALEXANDRE -	2177	8th Sept. 1860	Improved means of extinguishing conflagrations. (Patented by William Edward Gedge.)
LELY, AFFIFI - - -	1974	15th Aug. 1860	New or improved machinery for grooving sewing-machine needles.

[Lem]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Lev]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
LEMAIGNEN, LOUIS VICTOR -	253	31st Jan. 1860	Certain arrangements of machinery for forming slivers as they come from the carding-engine into threads, and for winding the threads on bobbins. (Patented by Richard Archibald Brooman.)
LEMOINE, FRANÇOIS HYPOLITE	472	22nd Feb. 1860	Manufacture of waterproof papers and paste boards of every description.
LENCAUCHEZ, ALEXANDRE -	2105	31st Aug. 1860	Treatment of zinc and other ores; apparatus employed therein. (Patented by John Henry Johnson.)
LENOIR, JEAN JOSEPH ETIENNE	335	8th Feb. 1860	Obtaining motive-power; machinery or apparatus employed therein. (Patented by John Henry Johnson.)
LEONARD, HENRY -	1039	25th April 1860	An improved fire guard or protector.
LEONARD, HORATIO -	77	1th Jan. 1860	Improved apparatus for moulding candles. (Patented by William Edward Newton.)
LEONARD, JAMES -	802	28th March 1860	Apparatus used when weaving. (Communicated by Carl Heinrich Zimmerman.)
LEONARD, JAMES -	2684	2nd Nov. 1860	Manufacture of ornamented woven fabrics when chenille is employed.
LEONHARDT, AUGUST -	985	19th April 1860	Dyeing cotton yarns or threads and fabrics. (Patented by John Dale and Heinrich Caro.)
LEONHARDT, AUGUST -	2956	1st Dec. 1860	Preparation of indigo for dyeing and printing; obtaining "pure" or "refined" indigo.
LEPAGE, CHARLES FRANÇOIS -	3099	17th Dec. 1860	Improvements applicable to fishing-nets. (Patented by Michael Henry.)
LEPETIT, CHARLES HONORÉ [HYPOLITE.	647	10th March 1860	An improved means of blasting rock. (Patented by José Luis.)
LEPETIT, MAXIME -	2970	4th Dec. 1860	The making of china and earthenware articles by machinery.
LEROUX, JEAN FRANÇOIS [FÉLIX.	466	21st Feb. 1860	An apparatus for facilitating the collection of money on counters.
LESLIE, GEORGE -	1962	14th Aug. 1860	Improvements in preserving casks and apparatus connected therewith.
LESLIE, JOHN -	1640	7th July 1860	Manufacture of gas.
LESPADIN, FRANÇOIS -	300	4th Feb. 1860	An improved mode of manufacturing decanters and other similar articles in glass or crystal of a rounded form.
LESTER, AARON -	2156	6th Sept. 1860	Looms for weaving.
LEUCHARS, WILLIAM -	868	5th April 1860	Portable ink-holders and match-boxes.
LEUCHS, JOHANN GEORG -	695	16th March 1860	Applying as a substitute for the animal albumen, hitherto obtained from birds eggs or blood, certain parts of reptiles, fish, mollusca, and articulated or radiated animals. (Patented by George White.)
LEVÉQUE, ALEXANDRE LOUIS -	2831	17th Nov. 1860	Improved apparatus for carburating or naphthalizing lighting gas.
LEVERSON, MONTAGUE RICH- [ARD.	1797	25th July 1860	Applying springs to locomotive engines and to railway and other carriages. (Communicated by William Hogg Brown.)
LEVERSON, MONTAGUE RICH- [ARD.	2713	6th Nov. 1860	Fire-arms. (Communicated by William Henry Smith.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
LEVSTAMM, FERDINAND -	2738	7th Nov. 1860	Stoves.
LEVETT, WILLIAM HALL -	1790	24th July 1860	An improved apparatus for increasing the illuminating power of coal gas, also for economizing the consumption thereof, and for regulating the pressure from street mains.
LEVISCHN, LIPPMANN JACOB -	496	23rd Feb. 1860	Porte-monnaies and certain other portable receptacles.
LEVRIEN, LOUIS FRÉDÉRIC -	2472	11th Oct. 1860	An improved crinoline protector or double petticoat. (Patented by Charles Stevens.)
LEWANDOSKI, CHARLES -	1889	4th Aug. 1860	Machinery for converting into down or fibres capable of being spun the remnants or cuttings or other waste pieces of silk or other fabrics. (Patented by Rudolph Bodmer.)
LEWIS, DANIEL BALDOCK -	2762	9th Nov. 1860	Improved apparatus for propelling steam vessels.
LEWIS, EDWIN - - -	2580	23rd Oct. 1860	An improved apparatus for washing, cleaning or separating particles of metal from other refuse matter.
LEWIS, FREDERICK - -	915	12th April 1860	Apparatus used in raising and lowering weights in mine shafts.
LEWIS, JOHN - - -	3185	29th Dec. 1860	Manufacture of pile carpets, rugs and other pile fabrics.
LEWIS, JOSEPH WILLIAM -	584	2nd March 1860	Looms for weaving ribbons.
LEWIS, RUFUS S. - - -	1722	16th July 1860	An improved covering for roofs and walls. (Patented by William Edward Newton.)
LEWIS, WILLIAM STAMP -	760	23rd March 1860	Manufacture of illuminating gas. (Communicated by Professor Sanders.)
LEWTAS, JOSEPH - - -	1002	21st April 1860	An improvement applicable to outside sun blinds.
LEYGONIE, LOUIS - - -	2012	21st Aug. 1860	Apparatus for obtaining motive-power based upon the hydrostatic paradox. (Patented by William Edward Gedge.)
LEYS, PIERRE IRÉNÉE - -	1091	30th April 1860	Jointing or connecting rails of railways. (Patented by Edward Thomas Hughes.)
LEYSHON, DANIEL AUGUSTUS -	2531	17th Oct. 1860	Coating certain forms or articles of iron, steel or zinc.
LEYSHON, GEORGE - - -	2131	4th Sept. 1860	Manufacture of tin and terne plates; apparatus employed therein.
LICHTENSTADT, DAVID - -	2157	6th Sept. 1860	Treating a certain substance to obtain textile fibres and materials for paper making and charcoal for gunpowder, pyrotechnic and other purposes.
LIGHT, CHARLES LLEWELLYN	743	22nd March 1860	Portable buildings and structures.
LIGHTFOOT, JOHN - - -	513	25th Feb. 1860	Fixing pigments and other colouring matters on textile fabrics and yarns.
LILLEY, HENRY LOUIS -	1181	14th May 1860	Machinery or apparatus for scraping starch.
LILLEY, JOHN - - -	1152	9th May 1860	An improved construction of horse hoe.
LILLIE, SIR JOHN SCOTT -	943	14th April 1860	Carriage-ways.
LILLIE, SIR JOHN SCOTT -	2030	23rd Aug. 1860	Blocks for building purposes.
LINDSAY, ANDREW - - -	2381	2nd Oct. 1860	Knives for reaping-machines.
LING, SAMUEL - - -	2795	14th Nov. 1860	Apparatus for lubricating steam-engines.
LINGFORD, JOSEPH - - -	1703	14th July 1860	An improved machine for washing, drying, and dressing currants.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
LINGFORD, SAMUEL - -	1703	14th July 1860	An improved machine for washing, drying and dressing currants.
LINGHAM, GEORGE CALLEY -	2987	5th Dec. 1860	Certain improvements in belt-fastenings, and which said improvements are also applicable as a connector for brace-fronts, garters, and other articles of dress.
LION, JULES RENÉ - - -	1404	7th June 1860	Preservation of animal and vegetable matters. ( <i>Patented by William Clark.</i> )
LISTER, HENRY - - -	1350	1st June 1860	Improvements in or applicable to fabrics composed of wool, cotton, silk, or other fibrous substances or combinations of these or other fibrous substances.
LISTER, JOSHUA - - -	638	9th March 1860	Construction of oil cans.
LISTER, SAMUEL CUNLIFFE -	761	23rd March 1860	Carding and preparing machines.
LISTER, SAMUEL CUNLIFFE -	1701	14th July 1860	Machines for preparing silk, flax, and other fibrous materials.
LISTER, SAMUEL CUNLIFFE -	3055	12th Dec. 1860	Spinning and doubling.
LIZARS, CHARLES - - -	3162	26th Dec. 1860	Gas meters.
LLOYD, THOMAS - - -	3106	18th Dec. 1860	Manufacture of metallic bedsteads, chairs and couches, and other articles of like manufacture.
LOCKETT, ENOCH - - -	2094	30th Aug. 1860	Stacking earthenware during the process of firing; apparatus used for that purpose.
LOEWENSTEIN, CASPAR - -	1211	17th May 1860	Arrangements for paying out submarine cables.
LOEWENSTEIN, CASPAR - -	1440	12th June 1860	Arrangements for paying out submarine cables.
LONG, — - - -	2895	26th Nov. 1860	Steam carriages and the running gear for street and other railways. ( <i>Patented by George Francis Train.</i> )
LONGMAID, JOHN - - -	1239	19th May 1860	Treating iron pyrites and other ores containing copper, silver, and tin, or either of them, and sulphur.
LONGSTAFF, RICHARD - -	1180	12th May 1860	Steam generators; means of or apparatus for superheating steam and heating the feed water.
LORBERG, WILLIAM - - -	287	3rd Feb. 1860	A new or improved method of employing tan or spent bark for chemical purposes.
LORD, EDWARD - - -	1182	14th May 1860	Machinery for opening, blowing, and cleaning cotton and other fibrous materials.
LORD, JAMES - - -	219	28th Jan. 1860	Machinery or apparatus employed in the manufacture of cotton and other fibrous materials, called "roving frames" and "doubling frames."
LORD, JOHN P. - - -	78	11th Jan. 1860	An improved construction of lock. ( <i>Patented by Alfred Vincent Newton.</i> )
LORD, JOSEPH - - -	754	23rd March 1860	Machinery or apparatus for preparing, spinning and twisting cotton and other fibrous substances.
LORENTZ, BERNHARD - -	2684	2nd Nov. 1860	Manufacture of ornamented woven fabrics when chenille is employed.
LORKIN, JOSIAH - - -	1066	27th April 1860	Manufacture of gunpowder. ( <i>Communicated by Volney Maxwell.</i> )
LOSH, WILLIAM SEPTIMUS -	2949	1st Dec. 1860	A new method of preparing sulphurous acid in solution.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
LOUVRIE, J. CHARLES DE -	2199	12th Sept. 1860	Moulding without models.
LOVELIDGE, THOMAS - -	481	22nd Feb. 1860	Looms for weaving.
LOVERIDGE, HENRY - -	3137	21st Dec. 1860	Meat screens.
LOVICK, WILLIAM FREDERICK	2863	22nd Nov. 1860	An improved bridle bit which he terms a check-snaffle-bit for restraining vicious or hard mouthed horses with greater facility than with any other bit.
Low, WILLIAM - - -	1073	27th April 1860	Machinery or apparatus for rubbing or finishing printing types.
LOWDEN, JOHN - - -	2964	3rd Dec. 1860	Carding engines.
LOWE, CHARLES - - -	1428	11th June 1860	Manufacture of colouring matters.
LOWERRA, WILLIAM JAMES -	250	31st Jan. 1860	Improved machinery for cutting dovetails. (Patented by William Edward Newton.)
LOWERY, CHARLES - - -	289	3rd Feb. 1860	Piston packing. (Patented by William Edward Newton.)
LOWNDES, ROBERT GILLIES -	533	27th Feb. 1860	Embossing and finishing woven fabrics.
LOWTHER, WILLIAM - - -	1290	24th May 1860	Coke ovens. (Communicated by Henry Eaton.)
LOYSEL, EDWARD - - -	1731	17th July 1860	Locks or fastenings. (Communicated by Viscount de Kersolon.)
LUBÉ, JOHN - - - -	694	15th March 1860	Guns and other fire-arms; cartridges to be used therewith.
LUCKOCK, JOSEPH - - -	2515	16th Oct. 1860	Certain improvements in ladies' clasps, and which said improvements are also applicable for connecting or holding waist-bands, belts, and other articles of dress.
LÜDEKE, JOHANN ERNST [FRIEDRICH.	684	15th March 1860	Obtaining motive-power by means of certain fluid bodies; apparatus connected therewith.
LUFKIN, A. D. - - -	2053	25th Aug. 1860	An improved mode of treating hides and skins, preparatory to the tanning process. (Patented by Alfred Vincent Newton.)
LUIS, JOZÉ - - - -	1	2nd Jan. 1860	An improved brick making machine. (Communicated by Joseph Tenaud.)
LUIS, JOZÉ - - - -	2	2nd Jan. 1860	An improved safety lock. (Communicated by Lasserre and Sarthou.)
LUIS, JOZÉ - - - -	235	30th Jan. 1860	Apparatus for preparing and clarifying resinous substances. (Communicated by Dromart and Dussillol Brothers.)
LUIS, JOZÉ - - - -	448	18th Feb. 1860	An improved jointed blind. (Communicated by A. E. Tardy.)
LUIS, JOZÉ - - - -	646	10th March 1860	An improved calcareous varnish for coating wood, metals, paper, ships, and other substances. (Communicated by Jean Francois Joseph Lecocq.)
LUIS, JOZÉ - - - -	647	10th March 1860	An improved means of blasting rock. (Communicated by Charles Honoré Hypolite Lepetit.)
LUIS, JOZÉ - - - -	648	10th March 1860	An improved mechanical damask loom. (Communicated by Philippe Joseph Galvaire.)
LUIS, JOZÉ - - - -	672	14th March 1860	A pneumatic telegraph. (Communicated by Pierre Richarme.)
LUKYN, WILLIAM, junior -	995	20th April 1860	A method of attaching artificial or natural teeth on expanded or contracted frames.

[Lun]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[M<sup>c</sup>D]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
LUNGLEY, CHARLES - -	2584	23rd Oct. 1860	Improvements in the construction of iron ships and other vessels, for the purpose of rendering them unsinkable and increasing their strength.
LUPTON, JOHN CLEGG - -	349	9th Feb. 1860	Machines for preparing and spinning cotton and other fibrous materials
LUVANDOSKI, CHARLES - -	288	3rd Feb. 1860	Machinery for converting into down or fibres capable of being spun, the remnant or cuttings or other waste pieces of silk or other fabrics. (Patented by Rudolph Bodmer.)
LYMAN, JOSIAH - - -	1793	24th July 1860	An improved mathematical or plotting instrument: "a protracting trigonometer." (Patented by William Edward Newton.)
LYNCH, EDWARD - - -	670	13th March 1860	An improved construction of churn. (Patented by Alfred Vincent Newton.)
LYNCH, PATRICK FRANCIS -	552	29th Feb. 1860	Improvements in the construction of boats and in the use or application of certain novel arrangements and apparatus thereto.
LYTE, F. MAXWELL - -	979	18th April 1860	Improved means of illuminating buoys, finger or direction posts, milestones, or other marks used at sea or on land to guide or direct navigators or travellers, so as to render such buoys, posts, or marks, visible at night. (Patented by William Edward Newton.)

## M.

MABON, WALTER, junior -	2625	27th Oct. 1860	Apparatus for heating the feed water for steam-boilers by the exhaust steam from high pressure engines.
MABSON, JOHN - - -	1372	5th June 1860	Improvements in metal life-buoys also adapted for holding water or other liquids.
MACARTHUR, RICHARD WAUGH	3107	18th Dec. 1860	Hulling and dressing rice and other grain. (Communicated by Thomas Sutherland.)
M <sup>c</sup> CROSSAN, JOSEPH - -	2340	26th Sept. 1860	Sewing-machines. (Communicated by George Juengst.)
M <sup>c</sup> CRUM, ROBERT GARMANY -	2534	17th Oct. 1860	Machinery or apparatus for preparing "cards" for jacquard machines.
M <sup>c</sup> CULLOCH, GILBERT - -	1298	25th May 1860	Machinery or apparatus for spinning and doubling silk, cotton, and other fibrous materials.
M <sup>c</sup> CULLOCH, JOHN - - -	574	1st March 1860	Reduction of gold, silver, and copper ores.
M <sup>c</sup> DONALD, WILLIAM - -	1136	8th May 1860	Military saddles; stirrup-irons to be used therewith.
M <sup>c</sup> DOUGALL, ALEXANDER -	162	21st Jan. 1860	Preparation of materials used for sizing, dressing, or finishing yarns or threads and woven fabrics, applicable also to sizing paper.
M <sup>c</sup> DOUGALL, ALEXANDER -	2510	15th Oct. 1860	Materials or compositions for destroying vermin on sheep and other animals, and for protecting them therefrom.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
McFARLANE, HUGH - - -	2832	17th Nov. 1860	Improvements in cameras such as are used by photographers.
McFARLANE, THOMAS FORRES- [TER.	245	31st Jan. 1860	Distilling apparatus. (Patented by William Tait.)
McGAULEY, JAMES WILLIAM -	3115	19th Dec. 1860	Means or apparatus for preventing collisions on railways.
McINNES, JOHN - - -	2594	24th Oct. 1860	Machinery, apparatus, or means for actuating or working railway breaks.
McKIBBIN, ROBERT DICKSON -	1969	14th Aug. 1860	An improved waterproof and non-inflammable material applicable to roofing and to other purposes for which felt, tarpauling, oil cloth and such like materials are now used.
McMILLAN, DANIEL - - -	1072	27th April 1860	Manufacture of boots, shoes, and clogs.
McNARY KNITTING MACHINE [COMPANY, THE.	2421	6th Oct. 1860	Knitting-machinery; mode of operating the same. (Patented by William Edward Newton.)
McNARY, WILLIAM HENRY -	452	18th Feb. 1860	Knitting-machines. (Patented by William Edward Newton.)
McNAUGHT, WILLIAM - - -	315	6th Feb. 1860	Steam-engines; apparatus connected therewith.
McNAUGHT, WILLIAM - - -	2411	5th Oct. 1860	Steam-engines.
MACAIRE, LOUIS CYRUS - - -	1788	24th July 1860	A substitute for nitrate of silver, particularly applicable to photographic purposes.
MACDONALD, WILLIAM STE- [VENSON.	736	21st March 1860	Dyeing or printing woven fabrics of mixed materials.
MACFARLANE, GEORGE - - -	2967	3rd Dec. 1860	Wind musical instruments.
MACFARLANE, WALTER - - -	1521	22nd June 1860	Improvements in waterclosets and sewerage, and sanitary apparatus or appliances.
MACINTOSH, JOHN - - -	1160	11th May 1860	Improvements in artificial gums, and setting and stopping teeth.
MACINTOSH, JOHN - - -	1295	25th May 1860	Breech loading fire-arms, ordnance cartridges and projectiles.
MACINTOSH, JOHN - - -	1560	27th June 1860	Improved compounds for coating or insulating submarine or other telegraphic wires, also in rendering the gutta-percha or india-rubber coatings of telegraphic wires impervious.
MACINTOSH, JOHN - - -	2547	18th Oct. 1860	Apparatus for compressing air, and raising and forcing water and other fluids.
MACKAY, JOHN S. - - -	2945	1st Dec. 1860	An apparatus for stopping rents or holes in fire-engine hose and other elastic tubes or pipes. (Patented by Robert Dawbarn.)
MACKENZIE, GEORGE - - -	1345	31st May 1860	Bobbins or holders for textile materials.
MACKENZIE, GEORGE - - -	1413	8th June 1860	Machinery or apparatus for twisting and doubling yarns and thread.
MACKENZIE, GEORGE - - -	2900	26th Nov. 1860	Bobbins or holders for textile materials.
MACKROW, ISAAC - - -	1460	15th June 1860	Alarum locks and latches.
MACNAB, WILLIAM - - -	1001	21st April 1860	Improvements in and connected with marine and other steam-engines.
MACNAB, WILLIAM - - -	1557	27th June 1860	Improvements in and connected with marine and other steam-engines.
MACNAB, WILLIAM - - -	2341	26th Sept. 1860	Steam-engines and boilers.



[Mac]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Man

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
MACNAMARA, BAMFYELD HENRI [FRANCIS.]	2377	2nd Oct. 1860	Construction of floating breakwaters adapted for the facile and economic formation of harbours of refuge and other such purposes.
MACNEILL, THOMAS TELFORD	2841	20th Nov. 1860	Improved means of obtaining adhesion on railways for ascending inclines and other purposes.
MACQUEEN, JOHN - - -	1240	19th May 1860	Treating certain manganese compounds for obtaining oxides of manganese and other products therefrom.
MAEGT, JOSEPH DE - -	1635	6th July 1860	Manufacture of paper.
MAGNUS, LAZARUS SIMON -	1164	11th May 1860	Improvements in the manufacture of wire rope, and in machinery for that purpose, with special application to the manufacture of telegraph cables.
MAHON, ARTHUR IRWIN -	2398	3rd Oct. 1860	Improvements in screw propellers, applicable also for raising and forcing water and other liquids, and obtaining motive-power from the same.
MAIDEN, ISAIAH - - -	2744	7th Nov. 1860	Slide valves for steam-engines.
MAIGRON, FREDERIC - -	1983	15th Aug. 1860	Improved machinery or apparatus for obtaining and applying motive-power.
MAILLARD, NICHOLAS DORAN	135	18th Jan. 1860	Improvements in the means for steering and indicating the course or direction and time of ships and other navigable vessels at sea, which improvements are also applicable to other purposes.
MALFILLE, JACQUES CHÉMILLE	1650	9th July 1860	An improved elastic band for sustaining and tightening pantaloons and waistcoats, drawers, petticoats or other dresses.
MALLINSON, GEORGE - -	864	5th April 1860	Manufacture of woven fabrics.
MALLINSON, THOMAS - -	2602	25th Oct. 1860	"Self-acting mules" for spinning cotton and other fibrous substances.
MALTBY, WILLIAM - - -	1050	26th April 1860	Treatment of rice in order to manufacture starch, starch-gum, and gums.
MALZARD, LEON - - -	1014	23rd April 1860	Machinery or apparatus for printing woven or other fabrics or tissues. (Patented by George Henry Birkbeck.)
MANCEAUX, FRANÇOIS JULES	2808	15th Nov. 1860	Sword bayonets and other swords. (Patented by Richard Archibald Brooman.)
MANGLES, MARTIN - - -	665	13th March 1860	A new mode of applying gases so as to effect the purifying and bleaching oils and fats, purifying, disinfecting and deodorizing fecal and decomposing matter and the gaseous products of decomposition, decomposing deleterious gases, purifying and decolouring soap, preparing flax, and other fibres, treating blood, night soil, bones and other substances whether solid, liquid, or gaseous.
MANIQUET, JEAN ANTOINE DE	799	28th March 1860	Winding, doubling, twisting and spinning silk, cotton, wool, flax, hemp, cord and other filamentous materials.
MANN, DONALD - - -	3026	10th Dec. 1860	Implements for digging and breaking up the soil. (Patented by Richard Archibald Brooman.)
MANN, WILLIAM - - -	2803	25th Oct. 1860	Apparatuses for washing and condensing gas.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
MANN, WILLIAM - -	2629	27th Oct. 1860	A method of indicating at a distance the revolutions of shafts, spindles and axles.
MANNING, JAMES ALEXANDER	1343	31st May 1860	Treatment, application and use of sewerage matters and the general wastes of towns and factories.
MANNING, RICHARD H. -	1129	7th May 1860	Manufacture of glass. (Patented by William Edward Newton.)
MANNIX, JAMES BALL -	2328	25th Sept. 1860	An improved wheel to be used for carriages or other purposes.
MANSON, MAGNUS - -	549	28th Feb. 1860	Gas meters.
MANTON, JOHN SHAKESPEARE	2907	26th Nov. 1860	Certain improved compositions useful for many purposes in connection with the arts and manufactures; machinery or apparatus to be employed therewith, which machinery or apparatus is also applicable to several other purposes of utility.
MANTON, JOSEPH P. - -	1709	14th July 1860	Construction of windlasses. (Patented by Alfred Vincent Newton.)
MANWARING, WILLIAM -	2870	23rd Nov. 1860	Gearing of mowing and other light portable machines.
MANZONI, JEAN - -	1815	26th July 1860	Manufacture of felted fabrics and paper. (Patented by Gaetano Bonelli.)
MAPPLE, DANIEL MOORE -	486	23rd Feb. 1860	Electric clocks and electric batteries.
MAPPLE, HENRY - -	1515	22nd June 1860	Apparatus for electric clocks and telegraphs.
MARCELIN, AUGUSTE - -	882	7th April 1860	Improved apparatus for treating peat or turf. (Patented by William Clark.)
MARDELL, DAVID - -	2919	28th Nov. 1860	Steam-engines; obtaining feed water for marine steam-engine boilers.
MARÉ, JEAN RÉMY - -	1103	2nd May 1860	Manufacture of bolts. (Patented by William Edward Gedge.)
MARE, JOHN DE LA - -	2579	23rd Oct. 1860	An improved lubricating composition to be used with other lubricators.
MARESCHAL, JULES - -	3002	7th Dec. 1860	Machinery for planing or cutting wood; apparatus connected therewith. (Patented by William Clark.)
MARGETSON, PAUL - -	2564	20th Oct. 1860	Boots.
MARGUERITTE, LOUIS JOSEPH [FRÉDÉRIC.	1027	24th April 1860	Manufacture of ammonia. (Patented by William Clark.)
MARGUERITTE, LOUIS JOSEPH [FRÉDÉRIC.	1171	11th May 1860	Manufacture of cyanides of barium and strontium. (Patented by William Clark.)
MARGUERITTE, LOUIS JOSEPH [FRÉDÉRIC.	2023	22nd Aug. 1860	Preparation or manufacture of manure. (Patented by William Clark.)
MARINI, HEBER - -	3064	13th Dec. 1860	Manufacture of gas. (Patented by William Clark.)
MARKS, JOSEPH - -	1729	17th July 1860	Means or apparatus used for lubricating valves and pistons and other portions of locomotives and other engines worked by steam, air, gas, or vapour. (Patented by George Spencer.)
MARLAND, JOHN - -	1259	22nd May 1860	Improvements in preparing for and in warping and sizing woollen and worsted and other yarns and threads.
MARLAND, JOHN - -	2847	21st Nov. 1860	Warping and sizing yarn and thread.
MARRIOTT, HENRY - -	2073	28th Aug. 1860	Fire-escapes.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
MARSDEN, JAMES - -	2554	19th Oct. 1860	An improved method of bleaching and whitening fibres and fabrics of various kinds.
MARSDEN, ROBERT - -	2951	1st Dec. 1860	Horses' shoes.
MARSH, JOHN - - -	391	13th Feb. 1860	Sewing-machines.
MARSH, WILLOUGHBY DIGBY	1470	16th June 1860	Kitchen ranges or apparatus for cooking.
MARSHALL, GEORGE - -	2743	7th Nov. 1860	Improved apparatus for obtaining motive-power from air. (Patented by William Edward Newton.)
MARSHALL, THOMAS BEAU- [MONT.	3149	22nd Dec. 1860	Wind musical instruments.
MARSHALL, THOMAS JOHN -	2538	18th Oct. 1860	Improvements in the manufacture of paper and in machinery or apparatus for effecting the same.
MART, FREDERICK WILLIAM -	461	20th Feb. 1860	Manufacture of mops or "sponges" for cleansing cannon.
MARTIN, ANDRÉ DESIRÉ -	1737	18th July 1860	Break-apparatus suited for railway-carriages and for other purposes.
MARTIN, CHARLES - - -	775	26th March 1860	Improvements in the manufacture of paper, applicable also to the manufacture of hats, bonnets, caps, and various articles of ladies' and gentlemen's wearing-apparel, furniture, boxes, ornaments, bottles, casks, and various articles of utility, vehicles, houses, sailing and steam vessels and boats, in the mixture of liquids, fibrous and other substances or materials for such purposes, and in the machinery connected therewith.
MARTIN, CHARLES - - -	2101	31st Aug. 1860	Improvements in the form and in the method of and means for constructing beams, joists, girders and rails, and in the permanent way of railways generally.
MARTIN, EMILE - - -	2279	19th Sept. 1860	Apparatus for manufacturing gas when dissolving zinc or iron in dilute sulphuric or other acid.
MARTIN, LOUIS - - -	866	5th April 1860	Improved apparatus and processes for decomposing neutral fatty bodies or matters into fatty acids and glycerine, and for the distillation thereof. (Patented by Edward Thomas Delafeld.)
MARTIN, LOUIS - - -	2662	31st Oct. 1860	Manufacture of candles.
MARTIN, LOUIS - - -	2963	3rd Dec. 1860	Treating and decomposing fatty matters; machinery or apparatus employed therein. (Patented by Edward Thomas Hughes.)
MARTIN, THOMAS - - -	909	11th April 1860	Construction of roofs.
MARTIN, THOMAS - - -	2305	21st Sept. 1860	An improved method of connecting and disconnecting pipes or tubes.
MARTIN, THOMAS - - -	2790	14th Nov. 1860	An improved portable rifle battery. (Patented by Frederick Edward Sharp.)
MARTIN, WILLIAM ARENA -	2351	28th Sept. 1860	An improved method of mounting and giving motion to fire-bars.
MARTZ, WILHELM - - -	717	19th March 1860	Tanning hides. (Patented by William Clark.)
MASON, BENJAMIN A. - -	30	5th Jan. 1860	An improved mode of and apparatus for fitting the abutting ends of the rails of railways together. (Patented by Alfred Vincent Newton.)

[Mas]

## ALPHABETICAL INDEX OF PATENTEES

[May]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
MASON, CHARLES - - -	2125	3rd Sept. 1860	Apparatus for dressing lace.
MASON, JAMES, junior - -	1038	25th April 1860	Looms for weaving.
MASSEY, THOMAS - - -	3042	11th Dec. 1860	Sounding machines.
MASSEY, WILLIAM - - -	2201	12th Sept. 1860	Manufacture of artificial mineral teeth, and the means whereby the same may be more securely attached to artificial gums and palates formed of vulcanite or other similar materials.
MASSIÈRE, FRANÇOIS PAULIN [EUGÈNE.]	2080	27th Aug. 1860	Manufacture of sheet tin; machinery or apparatus employed therein. (Patented by John Henry Johnson.)
MASSON, JEAN PEZIEUX [BALTHAZAR.]	1387	6th June 1860	A new material for packing and other purposes, together with the apparatus used in the manufacture thereof. (Patented by Charles Stevens.)
MASURE, GEORGES - - -	1085	30th April 1860	Construction of railway crossings.
MATHER, COLIN - - -	2070	27th Aug. 1860	Gas singeing apparatus.
MATHER, COLIN - - -	2388	2nd Oct. 1860	Machinery for shearing and singeing fabrics.
MATHEWS, ROBERT - - -	59	9th Jan. 1860	Manufacture of wheels and axles.
MATHIEU, JULES - - -	3014	8th Dec. 1860	Apparatus for applying capsules to bottles. (Patented by John Henry Johnson.)
MATLEY, RICHARD - - -	1421	9th June 1860	Machinery or apparatus for printing woven fabrics.
MATTER, JOSEPH - - -	2955	1st Dec. 1860	Looms. (Patented by William Clark.)
MATTHEWMAN, BENJAMIN, [junior.]	241	30th Jan. 1860	Pen and pocket knives, scissors, and every other description of cutlery.
MATTHEWS, JOHN - - -	2799	15th Nov. 1860	Brewing.
MATTHEWS, JOHN WILLIAM -	264	1st Feb. 1860	Manufacture of hats.
MATTHEY, CHARLES - - -	1158	10th May 1860	Breech loading fire-arms. (Patented by William Edward Gedge.)
MAUDE, JAMES - - -	444	17th Feb. 1860	A combined garden roller and seat.
MAUPOIL, CLAUDE - - -	2575	22nd Oct. 1860	Feeding steam-boilers. (Patented by William Edward Gedge.)
MAUREAU, ALPHONSE - -	1885	3rd Aug. 1860	Embroidering-machines. (Patented by William Clark.)
MAURER, JEAN JACQUES -	203	26th Jan. 1860	An improved propeller applicable to various purposes.
MAUVILLIN, PIERRE - -	1932	9th Aug. 1860	An improved sewing and embroidering machine.
MAWSON, JAMES - - -	1457	15th June 1860	An improved equilibrium slide valve applicable to engines worked by steam or other motive power.
MAXFIELD, ARTHUR - - -	2467	10th Oct. 1860	Construction of waterclosets and urinals, together with flushing apparatus connected therewith, which said flushing apparatus is also applicable to the watering of gardens, the cleansing of windows, or for other purposes.
MAXWELL, JOSEPH ALEX- [ANDER.]	778	26th March 1860	Hydraulic engines to act either alone or in combination with steam and steam-engines.
MAXWELL, VOLNEY - - -	1066	27th April 1860	Manufacture of gunpowder. (Patented by Josiah Lorkin.)
MAY, CHARLES NEALE - -	1172	11th May 1860	Brick making machines.

May]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Men]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
MAYER, FERDINAND FEIST -	314	6th Feb. 1860	An improved mode of producing certain compounds of lead. (Patented by Alfred Vincent Newton.)
MAYNARD, EDWARD - -	2783	10th Nov. 1860	Breech-loading fire-arms. (Patented by William Spence.)
MAYNES, JOHN - - -	370	11th Feb. 1860	Improvements in apparatus applicable to steam-boilers for liberating steam therefrom either in the event of excessive pressure or of deficiency of water, for giving audible signals in the like cases, and for regulating the supply of water thereto.
MAYR, JOSEF FRANZ - -	986	19th April 1860	Obtaining of light; apparatus employed therein. (Communicated by Johann Nepomuck Reithoffer.)
MAZELINE, — - - -	1289	24th May 1860	Improved machinery or apparatus for mixing and moulding materials for the manufacture of fuel, part of which machinery or apparatus is applicable to moulding bricks and other analogous articles. (Patented by William Edward Newton.)
MEAKIN, GEORGE FREDERICK [LEE.]	1801	25th July 1860	Construction of boxes, trunks, or packing cases to be called the "plicabilis" or folding box, trunk, or packing case.
MEAKIN, JOHN FORSTER -	151	20th Jan. 1860	Envelopes.
MEARS, GEORGE W. - -	1197	15th May 1860	An improved mode of and apparatus for churning butter. (Patented by Silas C. Salisbury.)
MEACHIM, JEAN - - -	1706	14th July 1860	Pianos and organs. (Communicated by Frederick Stanislas Wiert.)
MEDLOCK, HENRY - - -	126	18th Jan. 1860	Preparation of red and purple dyes.
MÈGE, HIPPOLYTE - - -	2092	30th Aug. 1860	Making bread and ship biscuit.
MEILLARD, ANTOINE - -	1387	6th June 1860	A new material for packing and other purposes, together with the apparatus used in the manufacture thereof. (Patented by Charles Stevens.)
MELLIER, JOHN - - -	2402	4th Oct. 1860	A new or improved mode of inflating air-mattresses and air cushions. (Patented by John Adams Knight.)
MELLO, JOHN ARNOLD - -	3073	13th Dec. 1860	Manufacture of stereoscopic slides.
MELLODEW, THOMAS - -	1987	16th Aug. 1860	Manufacture of velvets and velveteens.
MELLODEW, THOMAS - -	2993	6th Dec. 1860	Treatment of velvets, velveteens, and other fabrics on which there are floated weft threads to be cut.
MELLOR, HENRY MOSES -	860	4th April 1860	Machinery for the manufacture of looped fabrics.
MELVILLE, ALEXANDER -	534	27th Feb. 1860	Preparation and manufacture of compounds for marking on paper and other fabrics and substances.
MENDAY, JOSEPH - - -	1346	31st May 1860	Kilns employed in and for the manufacture of cement.
MENNONS, MARC ANTOINE [FRANÇOIS.]	23	4th Jan. 1860	An improved fertilizing compound for agricultural purposes. (Communicated by Messrs. Charles de Chauveau and Celeste Duval.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
MENNONS, MARC ANTOINE [FRANÇOIS.]	24	4th Jan. 1860	Production of motive-power; apparatus connected therewith. (Communicated by Louis Diodor Läserson.)
MENNONS, MARC ANTOINE [FRANÇOIS.]	100	14th Jan. 1860	An improved candle wick. (Communicated by Léopold Autran.)
MENNONS, MARC ANTOINE [FRANÇOIS.]	268	2nd Feb. 1860	Improved machinery for stripping and extracting the filaments of textile plants, and applicable to the treatment of fibro-ligneous matters in general. (Communicated by Adolphe Boye.)
MENNONS, MARC ANTOINE [FRANÇOIS.]	292	4th Feb. 1860	An improved means of joining surfaces of leather. (Communicated by A. L. Dezaux-Lacour.)
MENNONS, MARC ANTOINE [FRANÇOIS.]	691	15th March 1860	An improved arrangement of apparatus for working and controlling railway signal discs. (Communicated by Henry Petitpierre.)
MENNONS, MARC ANTOINE [FRANÇOIS.]	692	15th March 1860	An improved metallic window-sash. (Communicated by François Curé.)
MENNONS, MARC ANTOINE [FRANÇOIS.]	769	24th March 1860	An improved means of closing or filling metallic joints. (Communicated by Frédéric Pierre Langenard.)
MENNONS, MARC ANTOINE [FRANÇOIS.]	770	24th March 1860	Method of and apparatus for the manufacture of candles. (Communicated by Léopold Autran.)
MENNONS, MARC ANTOINE [FRANÇOIS.]	935	14th April 1860	Production of motive-power; apparatus connected therewith. (Communicated by Jacques Belou.)
MENNONS, MARC ANTOINE [FRANÇOIS.]	936	14th April 1860	An improved setting for lamp reflectors. (Communicated by Messieurs Gustave and Adrien Künkler.)
MENNONS, MARC ANTOINE [FRANÇOIS.]	1212	17th May 1860	An improved handle or hold fast for files, chisels, and similar tools. (Communicated by Amédée Paillard.)
MENNONS, MARC ANTOINE [FRANÇOIS.]	1213	17th May 1860	Cylinders and pistons of steam and other engines or machines propelled by aëriiform fluids. (Communicated by Joseph Auguste Monnier, and Georges Brunier.)
MENNONS, MARC ANTOINE [FRANÇOIS.]	1214	17th May 1860	An improved carriage break or drag. (Communicated by J. L. Simon.)
MENNONS, MARC ANTOINE [FRANÇOIS.]	1215	17th May 1860	An improved railway break. (Communicated by Oscar Prevosté.)
MENNONS, MARC ANTOINE [FRANÇOIS.]	1657	10th July 1860	An improved steam-boiler. (Communicated by Adolph Keisler.)
MENNONS, MARC ANTOINE [FRANÇOIS.]	1658	10th July 1860	Construction and arrangement of apparatus for obtaining motive-power from heated compressed air. (Communicated by Frédéric Guibé.)
MENNONS, MARC ANTOINE [FRANÇOIS.]	1772	21st July 1860	Construction and arrangement of marine steam-engines. (Communicated by Vincent Gâche, senior.)
MENNONS, MARC ANTOINE [FRANÇOIS.]	1799	25th July 1860	Processes of and apparatus for unwinding silk from cocoons. (Communicated by Pasquale Andervati, and Guiseppe Piazza.)
MENNONS, MARC ANTOINE [FRANÇOIS.]	1800	25th July 1860	Etching on zinc. (Communicated by Edouard Eugène Reynal and Emile Bellot.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
MENNONS, MARC ANTOINE [FRANÇOIS.]	2057	27th Aug. 1860	Construction of axle boxes and axle bearings. (Communicated by Augustin Joseph Cambon.)
MENNONS, MARC ANTOINE [FRANÇOIS.]	2058	27th Aug. 1860	Salt-cellars, pepper-casters and similar utensils. (Communicated by Mr. J. B. L. Laine.)
MENNONS, MARC ANTOINE [FRANÇOIS.]	2192	11th Sept. 1860	An improved apparatus for sealing letters and other documents. (Communicated by L. M. H. Fromont.)
MENNONS, MARC ANTOINE [FRANÇOIS.]	2345	27th Sept. 1860	Improved processes for dyeing or printing with certain products of aniline on cotton and other textile matters of vegetable origin. (Communicated by J. C. Guigon.)
MENNONS, MARC ANTOINE [FRANÇOIS.]	2775	13th Nov. 1860	An improved manufacture of coverings for the head. (Communicated by Gustave Victor Roger.)
MENNONS, MARC ANTOINE [FRANÇOIS.]	2776	13th Nov. 1860	Improvements in the motive mechanism of cabinet organs and other cylinder musical instruments of that class. (Communicated by Lodovico Gavioli.)
MENNONS, MARC ANTOINE [FRANÇOIS.]	2778	13th Nov. 1860	Construction of organ pipes. (Communicated by Claudio Gavioli.)
MÉNONVILLE, MICHEL ANTOINE FRANÇOIS THIBAUD [DE.]	610	6th March 1860	An improved machine for drying fecula. (Patented by William Edward Gedge.)
MÉNONVILLE, MICHEL ANTOINE FRANÇOIS THIBAUD [DE.]	611	6th March 1860	Improved machinery or apparatus for washing fecula. (Patented by William Edward Gedge.)
MERWIN, JOSEPH - - -	1708	14th July 1860	An improved manufacture of waterproof leather. (Patented by William Edward Newton.)
MEYER, — - - - -	1973	15th Aug. 1860	Manufacture or preparation of indigo. (Patented by Henry Bernoulli Barlow.)
MEYER, CHARLES JOSEPH DE	1241	21st May 1860	Pianofortes.
MEYER, FREDERICK CHRIS- [TIAN.]	757	23rd March 1860	Machinery for copying ornamental figures and forms.
MEYN, J. C. C. - - -	1597	2nd July 1860	Harrowes. (Patented by Richard Archibald Brooman.)
MICHAUX, FIDÈLE - -	2975	4th Dec. 1860	A new sort of "safety lamp for mines"
MICHEL-SAINTON, EUSTACHE	1405	7th June 1860	Improvements in knitting processes, and in apparatus for the same.
MIDDLETON, SAMUEL - -	1942	10th Aug. 1860	Combining and preparing surfaces of paper and other materials for the purpose of preventing forgery or fraud in the manufacture of bank notes, cheques, bills of exchange or other valuable documents.
MIDDLETON, SAMUEL - -	3163	26th Dec. 1860	Manufacture of boots and shoes; means and apparatus employed for uniting and preparing surfaces of leather and similar materials for this and other purposes.
MIDDLETON, WILLIAM -	1993	17th Aug. 1860	Machinery or apparatus for making paper.
MIDGLEY, JAMES WATER- [HOUSE.]	547	28th Feb. 1860	Machinery for spinning wool, mohair, alpaca, and other fibrous substances.
MIDGLEY, JOHN - - -	3194	31st Dec. 1860	Trombones.
MILLAN, DANIEL Mc - -	1072	27th April 1860	Manufacture of boots, shoes, and clogs.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
MILLAR, ALEXANDER - -	3031	10th Dec. 1860	Machinery for "quartering" cork-wood, and for cutting the "quarters" into bottle corks. (Patented by William Edward Newton.)
MILLAR, ALEXANDER - -	3079	14th Dec. 1860	Improved machinery for cutting and rounding corks and bungs. (Patented by William Edward Newton.)
MILLARD, DAVID - - -	747	22nd March 1860	Sewing-machines. (Communicated by James Rowe.)
MILLARD, DAVID - - -	794	27th March 1860	Sewing-machines. (Communicated by W. E. Braman.)
MILLER, DANIEL - - -	2270	18th Sept. 1860	Mode of constructing breakwaters, piers, quays, sea walls, and the submarine works of fortifications.
MILLER, DAVID SELKIRK -	2653	30th Oct. 1860	Weaving; apparatus used for that purpose.
MILLER, HORACE ALONZO -	289	3rd Feb. 1860	Piston packing. (Patented by William Edward Newton.)
MILLER, JOHN - - -	336	8th Feb. 1860	Propelling vessels, ships and boats.
MILLER, MARMADUKE - -	669	13th March 1860	Water and steam-gauges for steam-boilers.
MILLER, THOMAS WILLIAM -	1396	7th June 1860	Boilers or steam generators.
MILLER, THOMAS WILLIAM -	1702	14th July 1860	Construction of tubular boilers or steam-generators and surface condensers and such like apparatus; method of forming, applying, fitting and using metal tubes for the same.
MILLER, WILLIAM HENRY -	2306	21st Sept. 1860	Cranes and other lifting apparatus.
MILLINGTON, JONATHAN -	2214	13th Sept. 1860	Throttle and expansion valves for engines worked by steam or other vapour, or by liquids or gases.
MILLION, FRANCIS - - -	1814	26th July 1860	Engines for obtaining motive-power. (Patented by Michael Henry.)
MILLS, ROBERT - - -	2446	9th Oct. 1860	Apparatus for preventing the retrogression of railway carriages on inclines.
MILNES, ALFRED - - -	981	19th April 1860	An improved grinding strickle for grinding the cards on the cylinders of carding engines.
MILNES, JOHN - - -	571	1st March 1860	An apparatus for exercising the joints and muscles of the human body.
MINASI, CARLO - - -	1035	25th April 1860	Music stools and other seats; stands for supporting music books and other articles.
MINIÉ, CHARLES CLAUDE [ETIENNE.]	1668	11th July 1860	Steam-engines. (Patented by William Clark.)
MINIÉ, CHARLES CLAUDE [ETIENNE.]	2059	27th Aug. 1860	Fire-arms. (Patented by William Clark.)
MIRABEL, VISCOUNT DU [VIGIER DE.]	2811	16th Nov. 1860	Sheet-iron tiles. (Patented by Charles Stevens.)
MITCHELL, ABRAHAM - -	926	13th April 1860	Looms for weaving.
MITCHELL, AURELIUS BRUCE -	94	13th Jan. 1860	Ornamenting brass knobs for doors, drawers, cupboards, and for other like purposes.
MITCHELL, BENJAMIN - -	1636	6th July 1860	An improved machine applicable for harrowing, weeding, hoeing, and other agricultural purposes.
MITCHELL, JOSEPH - -	780	26th March 1860	An improvement in pulleys applicable for raising and lowering window blinds, maps and other articles mounted upon rollers, and retaining them in a given position.

[Mit]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[Moo]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
MITCHELL, JOSEPH - -	926	13th April 1860	Looms for weaving.
MITCHELL, JOSEPH - -	2703	3rd Nov. 1860	Manufacture of cast iron pipes, tubes, rollers and similar work.
MITTON, WILLIAM - - -	379	11th Feb. 1860	Apparatuses employed for cleaning, dressing, winnowing, separating and sifting grain and seeds and such like matters.
MOCOMBLE, ANTOINE JULES [ALFRED CAVELIER DE.	3165	26th Dec. 1860	Smoothing-irons. (Patented by John Henry Johnson.)
MOFFAT, JOHN - - -	456	20th Feb. 1860	Steam-boiler furnaces.
MOLE, FREDERICK MAJOR -	1991	17th Aug. 1860	Manufacture of matchets and cutlasses.
MOLE, ROBERT - - -	1991	17th Aug. 1860	Manufacture of matchets and cutlasses.
MOLINEUX, THOMAS - - -	1075	28th April 1860	Piano-fortes.
MOLONY, JOHN - - -	2088	29th Aug. 1860	An improved mode of applying roasting-jacks to kitchen ranges and cooking stoves.
MOMET, JEAN - - - -	3109	18th Dec. 1860	Shears for cutting sheet metal and other materials. (Patented by Richard Archibald Brooman.)
MONCKTON, EDWARD HENRY [CRADOCK.	2820	16th Nov. 1860	Application of electricity or magnetism to the human body for the relief of pain and cure of disease.
MONGIARDINO, — - -	2400	4th Oct. 1860	An improved machine for applying steam in a manner to cause direct rotation. (Patented by Charles Whicher.)
MONKHOUSE, ELLIOTT - -	2869	23rd Nov. 1860	Improvements in the construction and manufacture, and the fixing or fastening, and the mobility, adjustment and readjustment of circular and polygonal heel plates for boots, shoes, and clogs.
MONKS, JAMES - - -	1414	8th June 1860	Rails and chairs of railways.
MONKS, JOHN - - -	813	29th March 1860	Improved machinery for manufacturing chenille.
MONNIER, JOSEPH AUGUSTE -	1213	17th May 1860	Cylinders and pistons of steam and other engines or machines propelled by aëriiform fluids. (Patented by Marc Antoine François Mençons.)
MONTGOMERY, RICHARD -	3008	8th Dec. 1860	Construction of steam-boilers. (Patented by George Davies.)
MONTGOMERY, RICHARD -	3084	15th Dec. 1860	Building bridges, ships, or other structures of iron or other metal. (Patented by George Davies.)
MONTGOMERY, RICHARD -	3085	15th Dec. 1860	Rolling and corrugating plates of metal; machinery or apparatus employed for such purposes. (Patented by George Davies.)
MONTGOMERY, RICHARD -	3086	15th Dec. 1860	Construction of iron or other metal beams; machinery or apparatus employed for such purpose. (Patented by George Davies.)
MOODY, CHARLES PETERS -	334	8th Feb. 1860	Carrying, supporting and shifting engines used in ploughing and other agricultural operations; apparatuses employed therein.
MOODY, CHARLES PETERS -	3050	12th Dec. 1860	Construction of gates.
MOORE, HENRY - - -	2124	3rd Sept. 1860	Machinery for sizing or dressing warps or yarns.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
MOORE, PAUL - - -	91	12th Jan. 1860	Manufacture of the dies or draw plates used in drawing wire and tubes, and for other similar purposes.
MOORE, PAUL - - -	145	20th Jan. 1860	Manufacture of the dies or draw plates used in drawing wire and tubes, and for other similar purposes. (Partly communicated by J. J. Eagleton.)
MOORE, PAUL, junior - -	91	12th Jan. 1860	Manufacture of the dies or draw plates used in drawing wire and tubes, and for other similar purposes.
MOORE, PAUL, junior - -	145	20th Jan. 1860	Manufacture of the dies or draw plates used in drawing wire and tubes, and for other similar purposes. (Partly communicated by J. J. Eagleton.)
MOORE, THOMAS - - -	3139	21st Dec. 1860	Navigating ships.
MORDAN, FRANCIS - - -	1685	12th July 1860	Improvements in bottles, jars or vessels for holding blacking, and in certain appurtenances thereof, part of the invention being applicable to stoppers for bottles used for other purposes.
MOREL, AUGUSTE VICTOR -	1870	2nd Aug. 1860	An improved apparatus for printing in colours textile fabrics and other surfaces.
MOREL, ERNEST LEON - -	3102	17th Dec. 1860	Improvements in ships' rudders and the mode of mounting or applying the same to the stern posts of vessels.
MOREL, JEAN JULES - - -	1054	26th April 1860	Lamps. (Patented by Richard Archibald Brooman.)
MORELAND, RICHARD, junior -	53	7th Jan. 1860	Condensing apparatus to be used with high pressure steam-engines.
MOREWOOD, EDMUND - - -	2985	5th Dec. 1860	Coating metals.
MORGAN, GEORGE CHEESMAN	1579	29th June 1860	Looms. (Communicated by Mr. Joseph Clifton.)
MORGAN, GEORGE CHEESMAN	1580	29th June 1860	Manufacture of driving belts and straps. (Communicated by Mr. Joseph Clifton.)
MORGAN, HENRY JOHN - -	1029	24th April 1860	Rockets.
MORGAN, WILLIAM - - -	480	20th Feb. 1860	Protecting the sides and ends of puddling-furnaces.
MORGUET, JEAN BAPTISTE -	2816	16th Nov. 1860	Improvements in fire-arms and ordnance, and in projectiles used therewith.
MORISON, JAMES - - -	3094	17th Dec. 1860	Apparatus for spinning or twisting.
MORLEY, ABRAHAM - - -	1529	23rd June 1860	A new machine or improved mechanical arrangements or combinations for the manufacture of stockings, vests, and other articles of hosiery.
MORLEY, JOSEPH ROBERTS -	2297	20th Sept. 1860	Manufacture of baking-dishes.
MORLEY, JOSEPH ROBERTS -	2977	4th Dec. 1860	Construction of crates and other packing cases.
MORNAY, HENRY DE - - -	1899	6th Aug. 1860	Apparatus for sorting or preparing tea for the market.
MORRELL, THOMAS - - -	2032	23rd Aug. 1860	Padlocks; keys for the same. (Patented by William Spence.)
MORRELL, THOMAS HENRY -	437	17th Feb. 1860	Improvements in apparatus used in moulding and pressing bricks, and in drying bricks, tiles, and other articles made from plastic earths.
MORRELL, THOMAS HENRY -	1167	11th May 1860	An improved machine for making bricks and tiles and other articles from plastic materials.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
MORRIS, DAVID ALEXANDER -	3136	21st Dec. 1860	Manufacture of sheet iron.
MORRIS, JAMES - - -	1609	3rd July 1860	An improved key for securing railway rails.
MORRIS, JAMES - - -	2407	4th Oct. 1860	Improvements in holdfasts and guide pulleys for the cords of venetian blinds for windows.
MORRIS, TIMOTHY - - -	653	10th March 1860	Voltaic batteries; vats used in depositing metals by electricity.
MORRIS, WILLIAM - - -	1515	22nd June 1860	Apparatus for electric clocks and telegraphs.
MORRIS, WILLIAM - - -	1835	28th July 1860	Construction of ships or vessels; mode of propelling them.
MORRIS, WILLIAM - - -	3006	7th Dec. 1860	Composition or compositions to be employed in the manufacture of firebricks, fire clay lumps, blocks, retorts, and for all the purposes for which ordinary fire clay is now used, part or parts of which compositions may also be employed as a substitute for emery.
MORRISON, ALFRED - - -	2827	16th Nov. 1860	Locks.
MORRISON, ROBERT - - -	411	15th Feb. 1860	Marine steam-engines and boilers.
MORRISON, WILLIAM HENRY -	62	10th Jan. 1860	Improvements in means or apparatus employed in the manufacture of bonnet and cap fronts, rouches, and other articles of millinery, parts of which improvements are also applicable in the treatment of lace for other purposes.
MOSELEY, DAVID - - -	1909	8th Aug. 1860	Manufacture of hats, caps, bonnets, and other coverings for the head; machinery connected therewith.
MOSSMAN, WILLIAM - - -	3124	20th Dec. 1860	Manufacture of bonnets from papered cloth.
MOTAY, CYPRIEN MARIE [TESSIÉ DU.]	1206	16th May 1860	Manufacture and application to fibres and fabrics of a new blue colour, and compounds of the same with other colours. (Patented by Charles Couper.)
MOUILLARD, PIERRE LOUIS [RÉNE.]	403	14th Feb. 1860	Manufacture of metal chains and chain cables.
MOULE, (REVEREND HENRY) -	1316	28th May 1860	Improvements in the nature and construction of closets and commodes for the reception and removal of excrementitious and other offensive matter, and in the manufacture of manure from thence.
MOULE, JOHN - - -	1302	26th May 1860	An improved apparatus applicable to flushing purposes.
MOULE, JOHN - - -	1467	16th June 1860	An improved self-acting apparatus for precipitating and collecting from solutions, metals and their salts, part of which apparatus is applicable to flushing purposes.
MOULIN, LOUIS FREDERICK -	1589	2nd July 1860	An improved system of water gauge for steam-boilers.
MOULTON, GEORGE - - -	1253	22nd May 1860	Machinery for transferring to or tracing upon printing rollers or cylinders copies of designs or patterns intended to be etched or engraved thereon.
MOUSTY, XAVIER - - -	588	3rd March 1860	An improved apparatus for washing ores.
MOY, THOMAS - - -	42	6th Jan. 1860	Steam-engine governors.
MOY, THOMAS - - -	2556	19th Oct. 1860	Construction of vessels for river navigation.
MOY, THOMAS - - -	2896	26th Nov. 1860	Direct action steam-engines and pumps.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
MUCKLOW, EDWARD - -	499	24th Feb. 1860	Treatment of madder-roots, munjeet, or other plants of a similar class.
MUGGERIDGE, E. - - -	2352	28th Sept. 1860	An improved method of and apparatus for plate printing. (Patented by Augustus Frederick Shepard.)
MULKAY, DENIS - - -	1280	23rd May 1860	Springs for supporting or distending ladies' dresses.
MULLER, ADRIEN - - -	2105	31st Aug. 1860	Treatment of zinc and other ores; apparatus employed therein. (Patented by John Henry Johnson.)
MÜLLER, MRS. - - -	530	25th Feb. 1860	Gilding and silvering silk and other fibrous substances. (Patented by Charles François Jules Fon- robert.)
MULLEY, WILLIAM ROBINSON	3174	27th Dec. 1860	Apparatus for steering ships or vessels.
MUNIER, FRANÇOIS, fils - -	2231	14th Sept. 1860	Apparatus for goffering felt or cloth hats or other analogous articles. (Patented by William Edward Gedge.)
MUNN, JOSEPH A. - - -	2551	19th Oct. 1860	A metallic thermometer. (Communicated by J. B. Hubbard.)
MUNN, WILLIAM AUGUSTUS -	1504	21st June 1860	An improved cartridge pouch.
MUNSLow, WILLIAM - - -	540	27th Feb. 1860	Weighting and clearing rollers used in machinery for preparing and spinning cotton and other fibrous materials.
MUNTZ, WILLIAM HENRY -	593	3rd March 1860	Construction of ferry boats.
MUNTZ, WILLIAM HENRY -	950	16th April 1860	Construction of floating piers.
MUNTZ, WILLIAM HENRY -	1183	14th May 1860	Certain improvements in marine steam-engines, part of which is applicable also to ships' pumps.
MUNTZ, WILLIAM HENRY -	2123	3rd Sept. 1860	An improved apparatus for relieving the strain upon ships' cables.
MURATORE, CHRISTOPHE -	1590	2nd July 1860	Obtaining colouring matter from the lentisc or mastic tree. (Patented by Edward Thomas Hughes.)
MURPHY, WILLIAM JEREMIAH	1311	28th May 1860	An improved motive-power engine.
MURRAY, DAVID - - -	2300	21st Sept. 1860	Means or apparatus used in weaving.
MURRAY, ROBERT - - -	2678	1st Nov. 1860	Manufacture of telegraph cables or ropes.
MURTON, FREDERICK MICHAEL	2214	13th Sept. 1860	Throttle and expansion valves for engines worked by steam or other vapour, or by liquids or gases.
MUSGRAVE, JONATHAN - -	2995	7th Dec. 1860	Apparatus for regulating the discharge of water from steam pipes.
MUSGROVE, RALPH NOWELL -	2894	26th Nov. 1860	Improvements applicable to street railway carriages, part of which are suitable for other purposes. (Patented by George Francis Train.)
MUSHET, ROBERT - - -	2233	14th Sept. 1860	Manufacture of cast steel.
MUSHET, ROBERT - - -	2298	20th Sept. 1860	Manufacture of a new or improved metallic alloy.
MUSHET, ROBERT - - -	2365	29th Sept. 1860	Manufacture of cast steel.
MUSHET, ROBERT - - -	3010	8th Dec. 1860	Manufacture of an alloy or alloys of titanium and iron.
MUSHET, ROBERT - - -	3030	10th Dec. 1860	Manufacture of an alloy or alloys of titanium and iron.
MUSHET, ROBERT - - -	3045	12th Dec. 1860	Manufacture of cast steel.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
MUSHET, ROBERT - - -	3070	13th Dec. 1860	Manufacture of iron and steel.
MUSSELWHITE, JOHN - -	97	13th Jan. 1860	Apparatus for transferring fluids.
MYERS, MAURICE - - -	1466	16th June 1860	Certain improvements in holders and connectors for holding papers and fancy-wares exposed for sale or for private use.
MYERS, MYER - - -	1466	16th June 1860	Certain improvements in holders and connectors for holding papers and fancy-wares exposed for sale or for private use.
MYERS, M. A. - - -	1179	12th May 1860	An improved construction of metallic fencing. (Patented by Silas C. Salisbury.)
MYRING, CHARLES - - -	2857	21st Nov. 1860	Manufacture of covered harness, furniture buckles, slides and other similar articles; machinery or apparatus to be employed in such manufacture.
N.			
NAPIER, JAMES - - -	834	31st March 1860	Manufacture of oil of turpentine and resin; apparatus connected therewith. (Patented by Edward Joseph Hughes.)
NAPIER, JAMES MURDOCH -	2247	15th Sept. 1860	Machinery for the manufacture of sugar.
NAPIER, JOHN - - -	637	8th March 1860	Steam-engines.
NARY, WILLIAM HENRY M <sup>c</sup> -	452	18th Feb. 1860	Knitting-machines. (Patented by William Edward Newton.)
NASH, WILLIAM HENRY -	576	1st March 1860	Steam-engines.
NASMYTH, THOMAS - - -	1173	11th May 1860	Taps and valves. (Communicated by Charles Bacqueville.)
NATORP, HEINRICH JOACHIM	1605	3rd July 1860	An improved fabric suitable for holding charges of gunpowder. (Patented by Richard Archibald Brooman.)
NAUGHT, WILLIAM M <sup>c</sup> - -	315	6th Feb. 1860	Steam-engines; apparatus connected therewith.
NAUGHT, WILLIAM M <sup>c</sup> - -	2411	5th Oct. 1860	Steam-engines.
NAUMANN, FISCHER - - -	1866	2nd Aug. 1860	Dolls. (Patented by Alfred Frederick Haas.)
NEAL, JOHN - - -	2011	21st Aug. 1860	A new or improved mixture or composition for fumigating plants, and thereby destroying insects infesting the said plants.
NEAL, THOMAS - - -	2640	29th Oct. 1860	Grinding mills.
NEAME, JOHN AUSTIN - -	1994	17th Aug. 1860	Machinery for manufacturing solid, hollow, or perforated bricks, socket and other pipes.
NEEDHAM, JOSEPH - - -	139	19th Jan. 1860	Application of the rise and fall of the waves to the propulsion of vessels.
NEEDHAM, JOSEPH - - -	3140	21st Dec. 1860	Breech loading fire-arms and cartridges.
NEILSON, WALTER MONTGO- [MERIE.]	360	10th Feb. 1860	Steam-engines and boilers.
NELSON, LEVI W. - - -	1884	3rd Aug. 1860	Washing-machines. (Patented by William Edward Newton.)

[Nes]

## ALPHABETICAL INDEX OF PATENTEEES

[New

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
NEST, CLAES VAN DEN - -	2674	1st Nov. 1860	An improved mode of preparing or insulating electric conductors for telegraphic purposes either on land or under water. (Patented by William Edward Newton.)
NEUMANN, CAESAR - -	2724	6th Nov. 1860	Manufacture of hoop skirts; machinery employed therein.
NEVEU-DEROTRÉE, VICTOR [GILLE MARIE JOSEPH.	1595	2nd July 1860	Improvements in chairs and other articles of furniture to be used principally at sea. (Patented by William Edward Gedge.)
NEVIERS, ALBRECHT DE - -	1704	14th July 1860	Breech loading fire-arms.
NEVILL, WILLIAM - - -	371	11th Feb. 1860	Manufacture of fleecy web.
NEVILLE, CHARLES - - -	3061	13th Dec. 1860	An improved washing-apparatus.
NEVILLE, SAMUEL - - -	462	20th Feb. 1860	Moulds for making pressed glass.
NEW, GEORGE ALEXANDER -	307	4th Feb. 1860	Construction of ships' stoves. (Patented by Alfred Vincent Newton.)
NEW, GEORGE ALEXANDER -	1030	24th April 1860	An improved construction of ships' stove. (Patented by Alfred Vincent Newton.)
NEWALL, JONATHAN - -	2050	25th Aug. 1860	Apparatus for "transferring the latent heat of steam to water or other fluids."
NEWBERRY, SAMUEL - - -	2124	3rd Sept. 1860	Machinery for sizing or dressing warps or yarns.
NEWBERRY, RICHARD CHARLES	2944	30th Nov. 1860	Manufacture of collars and wristbands.
NEWBOLD, CHARLES - - -	912	12th April 1860	Machinery or apparatus for, and method of manufacturing vessels and other articles.
NEWBON, JAMES THOMAS [PETER.	1616	4th July 1860	Apparatus or machinery and gearing for working, stopping, and holding chains in ships or vessels, and for moving or retaining heavy weights.
NEWELL, THOMAS FREDERICK	1355	1st June 1860	Punching the leaves of cheque and other books and other papers. (Partly communicated by Antoine Lapointe.)
NEWY, HENRY - - -	3048	12th Dec. 1860	Manufacture of certain parts of umbrellas and parasols.
NEWHOUSE, JAMES - - -	729	21st March 1860	Machinery for preparing, spinning, and doubling cotton and other fibrous materials.
NEWHOUSE, JAMES - - -	1587	2nd July 1860	Machinery for spinning and doubling cotton and other fibrous materials.
NEWHOUSE, JAMES - - -	2025	23rd Aug. 1860	Improvements in or applicable to certain machines for spinning and doubling cotton and other fibrous materials.
NEWHOUSE, JAMES - - -	3096	17th Dec. 1860	Machinery for carding cotton and other fibrous substances.
NEWMAN, JAMES - - -	1643	7th July 1860	Manufacture of hooks and other similar dress fastenings.
NEWMANN, ANTON - - -	1930	9th Aug. 1860	Treatment of food for cattle; machinery or apparatus employed therein. (Communicated by Franz Xavier Kientzle and Joseph Reiss.)
NEWMANN, ANTON - - -	1931	9th Aug. 1860	Hanging and fastening of doors, lids and other hinged covers. (Communicated by Franz Xavier Kientzle.)
NEWTON, ALFRED VINCENT -	16	3rd Jan. 1860	Improvements in the cut off motion and slide valves of steam-engines. (Communicated by Charles Auguste Schultz and John Hauck.)



New]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[New

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
NEWTON, ALFRED VINCENT -	30	5th Jan. 1860	An improved mode of and apparatus for fitting the abutting ends of the rails of railways together. (Communicated by Benjamin A. Mason.)
NEWTON, ALFRED VINCENT -	78	11th Jan. 1860	An improved construction of lock. (Communicated by John P. Lord and Richard N. Batchelder.)
NEWTON, ALFRED VINCENT -	168	23rd Jan. 1860	Improved apparatus for regulating the delivery of yarn from yarn beams. (Communicated by Luther Robinson.)
NEWTON, ALFRED VINCENT -	306	4th Feb. 1860	An improved construction of combination steam gauge. (Communicated by E. G. Allen.)
NEWTON, ALFRED VINCENT -	307	4th Feb. 1860	Construction of ships' stoves. (Communicated by George Alexander New.)
NEWTON, ALFRED VINCENT -	313	6th Feb. 1860	Laying submarine electric telegraph cables. (Communicated by James Bell Alexander.)
NEWTON, ALFRED VINCENT -	314	6th Feb. 1860	An improved mode of producing certain compounds of lead. (Communicated by Ferdinand Feist Mayer.)
NEWTON, ALFRED VINCENT -	377	11th Feb. 1860	An improved construction of joints for railway bars or rails. (Communicated by George Smith Avery.)
NEWTON, ALFRED VINCENT -	662	12th March 1860	Steam-engines. (Communicated by Henry Waterman.)
NEWTON, ALFRED VINCENT -	670	13th March 1860	An improved construction of churn. (Communicated by Edward Lynch.)
NEWTON, ALFRED VINCENT -	683	14th March 1860	An improved construction of nail plate feeder. (Communicated by John Waldron Hoard and Thomas A. Searle.)
NEWTON, ALFRED VINCENT -	737	21st March 1860	An improved construction of bridle. (Communicated by E. Biechy.)
NEWTON, ALFRED VINCENT -	876	5th April 1860	Construction of pressure gauges. (Communicated by T. Wilson Lane.)
NEWTON, ALFRED VINCENT -	877	5th April 1860	An improved arrangement of parts for supplying steam to steam-engines. (Communicated by Lucius J. Knowles.)
NEWTON, ALFRED VINCENT -	942	14th April 1860	Rotating breech fire-arms. (Communicated by Edward Savage.)
NEWTON, ALFRED VINCENT -	1030	24th April 1860	An improved construction of ships' stove. (Communicated by George Alexander New.)
NEWTON, ALFRED VINCENT -	1100	1st May 1860	Improved apparatus for lifting vessels out of water. (Communicated by Horace Irving Crandall.)
NEWTON, ALFRED VINCENT -	1207	16th May 1860	An improved mode of treating oils for the production of gas and volatile oils. (Communicated by the Société Parisienne pour l'éclairage au Gaz.)
NEWTON, ALFRED VINCENT -	1236	19th May 1860	An improved liquid preparation of tobacco. (Communicated by George Jaques.)
NEWTON, ALFRED VINCENT -	1340	31st May 1860	Application of steam to the warming of buildings and apartments; apparatus therefor. (Communicated by Lewis Walker Leeds and Calvert Vaux.)
NEWTON, ALFRED VINCENT -	1442	12th June 1860	An improved carriage ventilator. (Communicated by Asa Hopgood.)



New]

## ALPHABETICAL INDEX OF PATENTEES

[New

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
NEWTON, ALFRED VINCENT -	1451	13th June 1860	An improved construction of weighing-machine. (Communicated by S. E. Robbins.)
NEWTON, ALFRED VINCENT -	1630	5th July 1860	An improved construction of spring butt hinge. (Communicated by George Bowen Pierson.)
NEWTON, ALFRED VINCENT -	1653	9th July 1860	Construction of portable ovens. (Communicated by Paul Plisson.)
NEWTON, ALFRED VINCENT -	1709	14th July 1860	Construction of windlasses. (Communicated by Joseph P. Manton.)
NEWTON, ALFRED VINCENT -	1765	20th July 1860	Manufacture of apparatus for regulating the force of electric currents. (Communicated by Giovanni Caselli.)
NEWTON, ALFRED VINCENT -	1791	24th July 1860	Improved means for relieving the slide valves of steam-engines of unnecessary pressure. (Communicated by David Stoddart.)
NEWTON, ALFRED VINCENT -	1807	25th July 1860	Process of concentrating and crystallising sugar. (Communicated by Horatio N. Fryatt.)
NEWTON, ALFRED VINCENT -	1925	8th Aug. 1860	Mode of and apparatus for superheating steam. (Communicated by Solomon Nunes Carvalho.)
NEWTON, ALFRED VINCENT -	1935	9th Aug. 1860	Ventilating buildings, vessels, and mines. (Communicated by Sidney Mason Stone.)
NEWTON, ALFRED VINCENT -	1957	13th Aug. 1860	An improved mode of treating waste vulcanized india-rubber. (Communicated by John Haven Cheever.)
NEWTON, ALFRED VINCENT -	1959	13th Aug. 1860	Mode of and machinery for manufacturing hose pipe. (Communicated by John Haven Cheever.)
NEWTON, ALFRED VINCENT -	1960	13th Aug. 1860	Mode of and apparatus for manufacturing packing for pistons and other parts of machinery. (Communicated by John Haven Cheever.)
NEWTON, ALFRED VINCENT -	1961	13th Aug. 1860	Manufacture of driving bands; machinery to be employed in such manufacture. (Communicated by John Haven Cheever.)
NEWTON, ALFRED VINCENT -	2007	20th Aug. 1860	An improved guard for boots, shoes and clogs. (Communicated by William Andrew Harris.)
NEWTON, ALFRED VINCENT -	2008	20th Aug. 1860	An improved mode of coupling the rails of railways. (Communicated by Joseph M. Heard.)
NEWTON, ALFRED VINCENT -	2053	25th Aug. 1860	An improved mode of treating hides and skins preparatory to the tanning process. (Communicated by A. D. Lufkin.)
NEWTON, ALFRED VINCENT -	2069	27th Aug. 1860	Bakers' ovens. (Communicated by Iverson Wilson Knapp.)
NEWTON, ALFRED VINCENT -	2251	15th Sept. 1860	Construction of brooms. (Communicated by William H. Towers.)
NEWTON, ALFRED VINCENT -	2309	21st Sept. 1860	Improved mode of producing relief printing plates, blocks and cylinders. (Communicated by De Witt Clinton Hitchcock, Edwin Blake Larchar, Edwin Metcalf Larchar, James Smith Talbot, and William Scudder Tisdale.)

New]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[New

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
NEWTON, ALFRED VINCENT -	2356	28th Sept. 1860	Mode of obtaining impressions from printing plates. (Communicated by William Harrison Oakes.)
NEWTON, ALFRED VINCENT	2530	17th Oct. 1860	Lamps. (Communicated by Francis Bernard De Keravenan.)
NEWTON, ALFRED VINCENT -	2543	18th Oct. 1860	Construction of passenger carriages. (Communicated by Thomas Castor.)
NEWTON, ALFRED VINCENT -	2544	18th Oct. 1860	Improved machinery for crushing quartz and other substances. (Communicated by Peter Hannay.)
NEWTON, ALFRED VINCENT -	2644	29th Oct. 1860	An improved washing machine. (Communicated by George Morton Ramsay.)
NEWTON, ALFRED VINCENT -	2655	30th Oct. 1860	An improved mode of and apparatus for desiccating wet or moist substances. (Communicated by J. Eugène Tourne.)
NEWTON, ALFRED VINCENT -	2745	7th Nov. 1860	An improved mode of and apparatus for sewing. (Communicated by William Cleveland Hicks.)
NEWTON, ALFRED VINCENT -	2757	8th Nov. 1860	Construction of sewing-machines. (Communicated by William Cleveland Hicks.)
NEWTON, ALFRED VINCENT -	2780	13th Nov. 1860	An improved construction of feathering paddle-wheel. (Communicated by Byron Densmore.)
NEWTON, ALFRED VINCENT -	2806	15th Nov. 1860	Sewing-machines. (Communicated by Dwight Tracy.)
NEWTON, ALFRED VINCENT -	2845	20th Nov. 1860	Construction of spring hinges. (Communicated by George Bowen Pierson.)
NEWTON, ALFRED VINCENT -	3152	22nd Dec. 1860	Watches. (Communicated by A. L. Dennison.)
NEWTON, ALFRED VINCENT -	3176	27th Dec. 1860	Construction of bedsteads. (Communicated by Tyler Howe.)
NEWTON, ALFRED VINCENT -	3183	28th Dec. 1860	Breech-loading fire-arms. (Communicated by Mahlon J. Gallagher.)
NEWTON, GEORGE HENRY -	1926	8th Aug. 1860	Mules for spinning and doubling.
NEWTON, ROBERT -	2704	5th Nov. 1860	Improved machinery for heckling flax and hemp.
NEWTON, WILLIAM EDWARD -	75	11th Jan. 1860	Improved apparatus for transmitting signals. (Communicated by Mark Runkel.)
NEWTON, WILLIAM EDWARD -	77	11th Jan. 1860	Improved apparatus for moulding candles. (Communicated by Henry Ryder and Horatio Leonard.)
NEWTON, WILLIAM EDWARD -	204	26th Jan. 1860	The manufacture of gold in a new form and its use in such form for filling or plugging teeth. (Communicated by Alfred Joseph Watts.)
NEWTON, WILLIAM EDWARD -	214	27th Jan. 1860	An improved folding frame designed for umbrellas, parasols, tents, awnings, sun blinds and other analogous structures. (Communicated by L. K. Selden.)
NEWTON, WILLIAM EDWARD -	215	27th Jan. 1860	Improved machinery for printing addresses on newspapers and on wrappers or envelopes, also for punching or indentating wooden or other blocks on plates from which the addresses are to be printed. (Communicated by Robert Winslow Davis and Daniel Davis.)

New]

## ALPHABETICAL INDEX OF PATENTEES

[New

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
NEWTON, WILLIAM EDWARD -	228	28th Jan. 1860	Improved machinery for carding silk, silk-waste and other filamentous substances. (Communicated by Antoine Louis Warnery.)
NEWTON, WILLIAM EDWARD -	243	30th Jan. 1860	Construction of soldering irons. (Communicated by Maria Louisa Burbank.)
NEWTON WILLIAM EDWARD -	250	31st Jan. 1860	Improved machinery for cutting dovetails. (Communicated by Thomas Haley Burley, Charles Henry Phelps, and William James Lowerra.)
NEWTON, WILLIAM EDWARD -	265	1st Feb. 1860	Improved apparatus for retarding railway carriages. (Communicated by Augustin Castellei.)
NEWTON, WILLIAM EDWARD -	289	3rd Feb. 1860	Piston packing. (Communicated by Charles Lowery and Horace Alonzo Miller.)
NEWTON, WILLIAM EDWARD -	325	7th Feb. 1860	Rendering waste "vulcanized," "hermized," and "changed" or "converted," india-rubber and india-rubber compounds useful and capable of being reworked for the manufacture of a great variety of articles of trade and commerce. (Communicated by John H. Cheever.)
NEWTON, WILLIAM EDWARD -	326	7th Feb. 1860	Fittings of sun shades or roller blinds. (Communicated by Valorus Drew.)
NEWTON, WILLIAM EDWARD -	343	8th Feb. 1860	Improvements in rails, rail supports and fastenings, and the nut fastenings of rail-bolts for the permanent way of railroads. (Communicated by George Willard Reed Bayley.)
NEWTON, WILLIAM EDWARD -	402	14th Feb. 1860	Improved apparatus for producing an artificial draft in chimneys and for purposes of ventilation. (Communicated by George Colhoun.)
NEWTON, WILLIAM EDWARD -	452	18th Feb. 1860	Knitting-machines. (Communicated by William Henry McNary and James Green Wilson.)
NEWTON, WILLIAM EDWARD -	458	20th Feb. 1860	A new and useful improvement in the smelting and refining of iron. (Communicated by John Black Cornell, William Wiggins Cornell, and Birdsall Cornell.)
NEWTON, WILLIAM EDWARD -	476	22nd Feb. 1860	Digestors for dissolving quartzose rocks. (Communicated by Timothy Hill Lang.)
NEWTON, WILLIAM EDWARD -	562	29th Feb. 1860	Improved machinery for making or forming the teeth of combs. (Communicated by William Noyes, junior.)
NEWTON, WILLIAM EDWARD -	606	5th March 1860	Window-sashes. (Communicated by Thomas Fry.)
NEWTON, WILLIAM EDWARD -	644	9th March 1860	An improved mode of attaching tools to handles. (Communicated by James Ezekiel Emerson.)
NEWTON, WILLIAM EDWARD -	664	12th March 1860	Improved machinery for making hat bodies. (Communicated by S. B. Tobey.)
NEWTON, WILLIAM EDWARD -	671	13th March 1860	Railway tracks and carriage wheels. (Communicated by William Wharton junior.)
NEWTON, WILLIAM EDWARD -	735	21st March 1860	An improved preparation or solution for toning photographic pictures. (Communicated by Joseph Chase Ritherford and Benjamin Hinman Steele.)

New]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[New

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
NEWTON, WILLIAM EDWARD -	758	23rd March 1860	Looms for weaving. (Communicated by Silas C. Salisbury.)
NEWTON, WILLIAM EDWARD -	767	24th March 1860	Calendars for clocks or other timekeepers. (Communicated by Wait T. Huntington, and Henry Platt.)
NEWTON, WILLIAM EDWARD -	795	27th March 1860	An improved washing machine. (Communicated by George L. Witsil.)
NEWTON, WILLIAM EDWARD -	898	10th April 1860	Improved apparatus for superheating steam. (Communicated by Benjamin Normand.)
NEWTON, WILLIAM EDWARD -	955	16th April 1860	Improved nippers for attaching blocks and tackles to ropes. (Communicated by William Henry Allen and Andrew Jackson Beatley.)
NEWTON, WILLIAM EDWARD -	969	17th April 1860	Pianofortes. (Communicated by Spencer Barthomolew Driggs.)
NEWTON, WILLIAM EDWARD -	977	18th April 1860	Pressing bonnets, bonnet frames and similar articles. (Communicated by Mary Jane Osborn, executrix of William Osborn deceased.)
NEWTON, WILLIAM EDWARD -	979	18th April 1860	Improved means of illuminating buoys, finger or direction posts, mile-stones or other marks used at sea or on land, to guide or direct navigators or travellers, so as to render such buoys, posts or marks visible at night. (Communicated by F. Maxwell Lyte.)
NEWTON, WILLIAM EDWARD -	1068	27th April 1860	Ordnance and fire-arms. (Communicated by Charles Frederick Brown.)
NEWTON, WILLIAM EDWARD -	1129	7th May 1860	Manufacture of glass. (Communicated by Richard H. Manning.)
NEWTON, WILLIAM EDWARD -	1130	7th May 1860	Rotary planes. (Communicated by John Sperry.)
NEWTON, WILLIAM EDWARD -	1150	9th May 1860	Manufacture of threads and yarns; preparation of fibrous materials for such manufacture. (Communicated by George R. Sampson.)
NEWTON, WILLIAM EDWARD -	1169	11th May 1860	Electric conductors for telegraphic purposes apparatus for and mode or means of transmitting signals between distant places. (Communicated by Benjamin H. Wright.)
NEWTON, WILLIAM EDWARD -	1184	14th May 1860	Iron pavements. (Communicated by Baron Otto des Granges.)
NEWTON, WILLIAM EDWARD -	1185	14th May 1860	Construction of metallic barometers. (Communicated by Felix Richard.)
NEWTON, WILLIAM EDWARD -	1196	15th May 1860	Improvements in valves and valve gear for the induction and eduction of steam to and from the cylinders of steam-engines, part of which is applicable to other purposes. (Communicated by Addison Crosby Simeon Savage and Hermann Swift Stearns.)
NEWTON, WILLIAM EDWARD -	1208	16th May 1860	Locks for safes, doors and other purposes. (Communicated by Lyman Derby.)
NEWTON, WILLIAM EDWARD -	1237	19th May 1860	Looms for weaving carpets and other looped and pile fabrics. (Communicated by Charles Crossley.)

New]

## ALPHABETICAL INDEX OF PATENTEES

[New

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
NEWTON, WILLIAM EDWARD -	1238	19th May 1860	Printing-blocks for printing fibrous and textile fabrics. (Communicated by Thomas Crossley.)
NEWTON, WILLIAM EDWARD -	1251	21st May 1860	Mode of and apparatus for winding clocks or other time-keepers. (Communicated by C. B. Hoard.)
NEWTON, WILLIAM EDWARD -	1289	24th May 1860	Improved machinery or apparatus for mixing and moulding materials for the manufacture of fuel, part of which machinery or apparatus is applicable to moulding bricks and other analogous articles. (Communicated by Messieurs Couillard and Mazeline.)
NEWTON, WILLIAM EDWARD -	1336	30th May 1860	Machinery for preparing and spinning hemp and similar fibrous materials. (Communicated by Joseph Compton Todd and Philip Rafferty.)
NEWTON, WILLIAM EDWARD -	1353	1st June 1860	A new and improved regulator for gas burners. (Communicated by George Washington Crummev.)
NEWTON, WILLIAM EDWARD -	1360	2nd June 1860	An improved permutation lock. (Communicated by William A. Carpenter.)
NEWTON, WILLIAM EDWARD -	1361	2nd June 1860	Improved machinery for kneading or preparing clay for the manufacture of bricks or other articles made from plastic materials. (Communicated by Claus H. Clausen.)
NEWTON, WILLIAM EDWARD -	1417	8th June 1860	Sewing-machines. (Communicated by Albert Gould Allen.)
NEWTON, WILLIAM EDWARD -	1524	22nd June 1860	Lithographic printing presses. (Communicated by Jean Baptiste Huguet.)
NEWTON, WILLIAM EDWARD -	1556	26th June 1860	Improved machinery for the manufacture of lace or bobbin net. (Communicated by Messrs. L'heureux Brothers.)
NEWTON, WILLIAM EDWARD -	1708	14th July 1860	An improved manufacture of waterproof leather. (Communicated by Samuel La Forge, Joseph Merwin, John Evans Bray, and Asa Goodell Trask.)
NEWTON, WILLIAM EDWARD -	1722	16th July 1860	An improved covering for roofs and walls. (Communicated by Rufus S. Lewis.)
NEWTON, WILLIAM EDWARD -	1773	21st July 1860	Looms for weaving. (Communicated by Mr. Van Peteghem.)
NEWTON, WILLIAM EDWARD -	1793	24th July 1860	An improved mathematical or plotting instrument: "a protracting trigonometer." (Communicated by Josiah Lyman.)
NEWTON, WILLIAM EDWARD -	1847	30th July 1860	Brushes for the hair or other purposes. (Communicated by John R. Ingersoll.)
NEWTON, WILLIAM EDWARD -	1871	2nd Aug. 1860	Knitting-machinery. (Communicated by James Green Wilson.)
NEWTON, WILLIAM EDWARD -	1882	3rd Aug. 1860	A new or improved musical instrument. (Communicated by Clarendon Williams and E. F. Falconet.)
NEWTON, WILLIAM EDWARD -	1883	3rd Aug. 1860	Wooden-soled boots and shoes or clogs. (Communicated by Marshall Jewell.)



New]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[New

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
NEWTON, WILLIAM EDWARD -	1884	3rd Aug. 1860	Washing-machines. (Communicated by Henry M. Coombs and Levi W. Nelson.)
NEWTON, WILLIAM EDWARD -	1907	7th Aug. 1860	Improved apparatus for retarding carriages. (Communicated by Jules Piault.)
NEWTON, WILLIAM EDWARD -	2087	29th Aug. 1860	Manufacture of iron and steel. (Communicated by Ebenezer Green Pomeroy.)
NEWTON, WILLIAM EDWARD -	2099	30th Aug. 1860	Floating structures. (Communicated by Thomas Schofield and Robert Schofield.)
NEWTON, WILLIAM EDWARD -	2108	31st Aug. 1860	Compositions for tanning skins and hides of all descriptions. (Communicated by C. L. Robinson and T. G. Eggleston.)
NEWTON, WILLIAM EDWARD -	2110	31st Aug. 1860	Air engines. (Communicated by John Ericsson.)
NEWTON, WILLIAM EDWARD -	2143	5th Sept. 1860	Belt shippers. (Communicated by John C. Goar.)
NEWTON, WILLIAM EDWARD -	2154	6th Sept. 1860	Manufacture of archil. (Communicated by Mr. Jean Frédéric Beyerbach.)
NEWTON, WILLIAM EDWARD -	2250	15th Sept. 1860	Safety locks. (Communicated by Edouard Louis Poirier.)
NEWTON, WILLIAM EDWARD -	2260	17th Sept. 1860	Lanterns. (Communicated by Nathaniel Tufts, junior, Augustus Tufts, and Simon G. Cheever.)
NEWTON, WILLIAM EDWARD -	2261	17th Sept. 1860	Manufacture of files. (Communicated by William P. Pierce.)
NEWTON, WILLIAM EDWARD -	2269	18th Sept. 1860	Gas meters. (Communicated by Nathaniel Tufts, junior, Augustus Tufts, and Simon G. Cheever.)
NEWTON, WILLIAM EDWARD -	2308	21st Sept. 1860	Rotary engines and rotary pumps. (Communicated by Kenyon Cox and Theodore Cox.)
NEWTON, WILLIAM EDWARD -	2398	3rd Oct. 1860	Lamps for burning coal oils and other hydrocarbons containing an excess of carbon. (Communicated by William Henry Racey.)
NEWTON, WILLIAM EDWARD -	2421	6th Oct. 1860	Knitting-machinery; mode of operating the same. (Communicated by the M <sup>c</sup> Nary Knitting Machine Company.)
NEWTON, WILLIAM EDWARD -	2435	8th Oct. 1860	Springs for railroad cars, locomotives, and carriages. (Communicated by John E. Jerrold, John Eugene Beggs, and Francis Scott.)
NEWTON, WILLIAM EDWARD -	2436	8th Oct. 1860	Treatment of ores and coal. (Communicated by Charles K. Landis.)
NEWTON, WILLIAM EDWARD -	2485	12th Oct. 1860	Manufacture of furniture nails or tacks and other articles provided with metallic pins or points. (Communicated by Mr. Jean Felix Bapterosses.)

New]

## ALPHABETICAL INDEX OF PATENTEES

[New

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
NEWTON, WILLIAM EDWARD -	2486	12th Oct. 1860	An improved fastening for window shutters and blinds. (Communicated by Augustus Reeve.)
NEWTON, WILLIAM EDWARD -	2511	15th Oct. 1860	Tools or machines for the manufacture of certain kinds of metallic tubes. (Communicated by Felix Richard.)
NEWTON, WILLIAM EDWARD -	2519	16th Oct. 1860	An improved mode of constructing railways. (Communicated by Alexander Hay.)
NEWTON, WILLIAM EDWARD -	2529	17th Oct. 1860	An improved mode of preserving hops and fitting them for storage and transportation. (Communicated by James C. Baldwin, Robert Brayton, and M. D. Baldwin.)
NEWTON, WILLIAM EDWARD -	2634	27th Oct. 1860	Improved apparatus for milking cows. (Communicated by L. O. Colvin.)
NEWTON, WILLIAM EDWARD -	2645	29th Oct. 1860	Looms. (Communicated by George Martin Gibson and Thomas Alexander Johnston.)
NEWTON, WILLIAM EDWARD -	2654	30th Oct. 1860	Production of alumina and salts of alumina. (Communicated by Mr. Louis Le Chatelier.)
NEWTON, WILLIAM EDWARD -	2674	1st Nov. 1860	An improved mode of preparing or insulating electric conductors for telegraphic purposes either on land or under water. (Communicated by Messrs. Claes Van den Nest and Company.)
NEWTON, WILLIAM EDWARD -	2689	2nd Nov. 1860	Preparing compounds of india-rubber, gutta-percha, and allied gums. (Communicated by Rudolph Franz Heinrich Havemann.)
NEWTON, WILLIAM EDWARD -	2690	2nd Nov. 1860	An improved press for compressing substances for packing in the form of bales or for other purposes. (Communicated by Jordon Eckel.)
NEWTON, WILLIAM EDWARD -	2743	7th Nov. 1860	Improved apparatus for obtaining motive-power from air. (Communicated by George Marshall.)
NEWTON, WILLIAM EDWARD -	2840	19th Nov. 1860	Improved means of and apparatus for supplying air to the furnace or furnaces or to the fire-rooms of steam vessels by means of the paddle-wheels. (Communicated by Louis Brandt.)
NEWTON, WILLIAM EDWARD -	2987	3rd Dec. 1860	Wind musical instruments.
NEWTON, WILLIAM EDWARD -	3019	8th Dec. 1860	Improved machinery for making bricks. (Communicated by John Caswell, Adolphus Sinsheimer, and Oran William Seely.)
NEWTON, WILLIAM EDWARD -	3031	10th Dec. 1860	Machinery for "quartering" cork-wood and for cutting the "quarters" into bottle corks. (Communicated by Alexander Miller.)
NEWTON, WILLIAM EDWARD -	3078	14th Dec. 1860	Improved pavement for streets. (Communicated by Lucius Stebbins.)
NEWTON, WILLIAM EDWARD -	3079	14th Dec. 1860	Improved machinery for cutting and rounding corks and bungs. (Communicated by Alexander Miller.)



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
NEWTON, WILLIAM EDWARD -	3156	24th Dec. 1860	An improved archer's bow and bow gun toy. (Communicated by William Henry Stevens and Benjamin Rigal Norton.)
NEWTON, WILLIAM EDWARD -	3182	28th Dec. 1860	Improved machinery to be used in the manufacture of paper. (Communicated by Mr. Heinrich Voelter.)
NICHOLLS, SILAS - - -	1039	25th April 1860	An improved fire guard or protector.
NICHOLS, JOHN - - -	1063	27th April 1860	Looms for weaving.
NICHOLSON, EDWARD CHAMBERS.	184	25th Jan. 1860	Production of colours for dyeing and printing.
NICHOLSON, EDWARD CHAMBERS.	224	28th Jan. 1860	Production of colours for dyeing or printing.
NICHOLSON, EDWARD CHAMBERS.	1591	2nd July 1860	Manufacture of a peroxide of lead having peculiar oxidizing properties.
NICHOLSON, HAMLET - -	1478	18th June 1860	A new and improved cricket and playing ball.
NICHOLSON, JAMES - - -	216	28th Jan. 1860	An improved main cock or tap for regulating and indicating the supply of gas.
NICHOLSON, JOSEPH - - -	1216	17th May 1860	Reaping-machines.
NICHOLSON, JOSEPH - - -	1849	30th July 1860	Reaping and mowing machines.
NICKLIN, JOSEPH - - -	2987	5th Dec. 1860	Certain improvements in belt-fastenings, and which said improvements are also applicable as a connector for brace-fronts, garters, and other articles of dress.
NICKOLS, DANIEL - - -	397	14th Feb. 1860	Machinery or apparatus for separating the fur from the skins of certain animals.
NICOLL, BENJAMIN - - -	2158	7th Sept. 1860	An improved method of treating needles and needles used in sewing and other machines, applicable also to those parts of such machines that hold the needles.
NICOLL, DONALD - - -	2191	11th Sept. 1860	An improved over-coat particularly adapted to military purposes: "Nicolls Lacerna."
NIMMO, GEORGE - - -	1249	21st May 1860	Manufacture of iron.
NIMMO, GEORGE - - -	1995	17th Aug. 1860	Manufacture of steel.
NISSEN, HILARY NICHOLAS -	781	26th March 1860	Preparation of paper in order to prevent the extraction or alteration of writings thereon without detection.
NISSEN, HILARY NICHOLAS -	1228	19th May 1860	Preparation of paper in order to prevent the extraction or alteration of writings thereon without detection.
NIXON, CHRISTOPHER NUGENT	220	28th Jan. 1860	Improvements in the construction of mangles, the same being also applicable to other machinery for the pressure of textile fabrics and other substances.
NIXON, JAMES - - -	704	16th March 1860	Manufacture of hypo-sulphate of soda.
NOBLE, JAMES - - -	1111	3rd May 1860	Screw-propellers.
NOEL, CHARLES - - -	874	5th April 1860	A new metallic alloy. (Patented by John Henry Johnson.)
NOEL, JEAN CYRILLE - - -	1120	5th May 1860	An improved means and apparatus for transporting and preserving live fish and keeping water fresh for a long period. (Patented by Charles Stevens.)
NOIROT, JEAN BAPTISTE JULES	1777	23rd July 1860	An improved method of manufacturing india-rubber tubes and various articles.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
NOONE, JOSEPH - - -	1632	5th July 1860	A new and useful improvement in the carding-machine. (Communicated by Joseph Davis.)
NORMAN, WILLIAM NICHOLAS	694	15th March 1860	Guns and other fire-arms; cartridges to be used therewith.
NORMAN, WILLIAM NICHOLAS	809	10th April 1860	Guns and other fire-arms; cartridges to be used therewith.
NORMAND, BENJAMIN - -	898	10th April 1860	Improved apparatus for superheating steam. (Patented by William Edward Newton.)
NORMANDY, ALPHONSE RENÉ [LE MIRE DE.	788	27th March 1860	Obtaining fresh water from salt water.
NORMANDY, ALPHONSE RENÉ [LE MIRE DE.	1112	3rd May 1860	Construction of steam-boilers.
NORMANDY, ALPHONSE RENÉ [LE MIRE DE.	1774	21st July 1860	Connecting gas and other pipes.
NORRIS, JOHN, junior - -	811	29th March 1860	Machinery to be used in the manufacture of wrought and horse nails.
NORRIS, STEPHEN - - -	1954	13th Aug. 1860	Manufacture of boots particularly adapted to military purposes.
NORTH, THOMAS - - -	512	24th Feb. 1860	Improved apparatus for receiving and recording votes by ballot.
NORTHEN, WILLIAM - - -	1057	27th April 1860	An improvement in the internal construction of kilns used for the burning of stoneware or earthenware of every description.
NORTON, BENJAMIN RIGAL -	3156	24th Dec. 1860	An improved archer's bow and bow gun toy. (Patented by William Edward Newton.)
NORTON, CHARLES - - -	125	17th Jan. 1860	An improved portable scaffolding adapted for constructing, ornamenting, and repairing buildings, and for the removal of goods and persons therefrom in cases of fire.
NORTON, DAVID ELON - - -	413	15th Feb. 1860	Winnowing and dressing machines. (Patented by George Whight.)
NORTON, JAMES LEE - - -	2386	2nd Oct. 1860	Apparatus used in tentering or stretching and drying fabrics.
NORTON, JAMES LEE - - -	3158	24th Dec. 1860	Apparatus for drying wool and other fibres.
NORTON, JAMES LEE - - -	3159	24th Dec. 1860	Apparatus for drying wheat, barley, and other grain and seeds.
NOSWORTHY, WILLIAM SAMUEL. [MUEL.	1323	29th May 1860	Piano-fortes.
NOTMAN, JOHN - - -	934	14th April 1860	Sewing-machines; apparatus connected therewith. (Communicated by James Clough Cropper.)
NOYES, WILLIAM, junior -	562	29th Feb. 1860	Improved machinery for making or forming the teeth of combs. (Patented by William Edward Newton.)
NURSE, GEORGE - - -	236	30th Jan. 1860	Manufacture of tin or "terne" and galvanized metal plates.
NUTHALL, WILLIAM FROST -	414	15th Feb. 1860	An improved portable machine for correcting and boring rifle bullets, also for turning in shot cartridge cases.
NUTHALL, WILLIAM FROST -	491	23rd Feb. 1860	An improved lubricant for small arms and Ordnance ammunition.
NUTTALL, JAMES - - -	2118	1st Sept. 1860	An improved "warping-machine."

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
<b>O.</b>			
OAKES, WILLIAM HARRISON -	2356	28th Sept. 1860	Mode of obtaining impressions from printing plates. (Patented by Alfred Vincent Newton.)
OBERT, LOUIS HENRY - -	1454	14th June 1860	Treating vegetable substances so as to obtain paper-pulp and other useful products therefrom. (Patented by Michael Henry.)
OBERT, LOUIS HENRY - -	1744	18th July 1860	A new colouring matter and the means of obtaining the same. (Patented by John Henry Johnson.)
OFFERGELD, HENRY - -	2362	29th Sept. 1860	Improvements in drums and apparatus connected therewith for giving motion to shafts.
OFFORD, ROBERT, junior - -	2932	29th Nov. 1860	Adaptation of india-rubber and compounds thereof to wheels.
OGDEN, JOHN - - - -	1627	5th July 1860	Power-looms for weaving.
OLDFIELD, BENJAMIN - -	2155	6th Sept. 1860	Looms.
OLDFIELD, JABEZ - - -	1976	15th Aug. 1860	Machinery or apparatus for weaving.
OLDHAM, JOHN - - - -	2286	20th Sept. 1860	Machinery for pulping turnips and other roots.
OLIVIERI, ——— - - -	2400	4th Oct. 1860	An improved machine for applying steam in a manner to cause direct rotation. (Patented by Charles Whicher.)
OLLIVIER, LOUIS BERTRAND -	11	3rd Jan. 1860	Ploughs.
OLORENSHAW, JOSEPH - -	1627	27th July 1860	Spectacle frames. (Communicated by Louis Strite Fellows.)
ORANGE, EMMA BENJAMIN -	1952	13th Aug. 1860	An improved method of and apparatus for unloosening horses instantly from a carriage when frightened or running away.
ORCHARD, WILLIAM HENRY -	81	12th Jan. 1860	Dressing millstones for cleaning all kinds of small grain having a husk or hull. (Communicated by Henry Darling.)
ORIARD, LOUIS - - - -	1018	24th April 1860	Breech loading fire-arms and their cartridges.
OSBORN, MARY JANE - - -	977	18th April 1860	Pressing bonnets, bonnet frames and similar articles. (Patented by William Edward Newton.)
OSBORNE, THOMAS - - - -	454	20th Feb. 1860	Coupling and uncoupling railway and other vehicles.
OSBOURN, FREDERICK - - -	1684	12th July 1860	Construction of endless saws and cutters.
OTTLEY, JOHN STRICKLAND -	649	10th March 1860	An improved indicator for registering the withdrawal of liquids from casks or other vessels.
QUIN, FREDERIC HIPPOLYTE -	2965	3rd Dec. 1860	Valves for closets and other receptacles. (Patented by Richard Archibald Brooman.)
OuwELANT, FERDINAND [PIERRE JEAN VAN DEN.	2043	24th Aug. 1860	Apparatus to be applied to fireplaces for obtaining absorption of the smoke and a better combustion of the fuel employed therein.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
OWEN, GEORGE - - -	251	31st Jan. 1860	Rocking horses, see-saws, and other analogous vibrating or oscillating contrivances.
OWEN, GRIFFITH - - -	2271	18th Sept. 1860	Construction of sawing-machines.
OWEN, HENRY - - -	1187	14th May 1860	Roasting-jacks.
OWEN, JOSEPH - - -	1170	11th May 1860	Construction of the bottoms of bedsteads, mattresses, couches, sofas, seats, chairs, and other articles for sitting or reclining upon, in order to render them more springy or elastic.
OXLAND, ROBERT - - -	1740	18th July 1860	Manufacture of gunpowder.
OXLAND, ROBERT - - -	2901	26th Nov. 1860	Manufacture of gunpowder.
OKLEY, WILLIAM - - -	355	9th Feb. 1860	Apparatus for extinguishing fires in manufactories and other buildings.
OZOUF, GEORGES HYACINTHE	1748	19th July 1860	Manufacture or production of white lead; machinery or apparatus employed therein. (Patented by John Henry Johnson.)

---

P.

---

PACKER, HENRY H. - - -	863	4th April 1860	An improved hand drill stock. (Patented by Edward Halliday Ashcroft.)
PADDOCK, WILLIAM - - -	1119	4th May 1860	Thrashing-machines.
PADDON, JOHN - - -	1290	24th May 1860	Coke ovens. (Communicated by Henry Eaton.)
PAGE, CHARLES GRAFTON -	3164	26th Dec. 1860	Instruments for assisting the sense of hearing. (Patented by John Henry Johnson.)
PAGET, ARTHUR - - -	624	7th March 1860	Knitting-machinery.
PAGLIARI, GIOVANNI - - -	3095	17th Dec. 1860	Machinery or apparatus for preventing or modifying the effects of collisions on railways. (Patented by Rudolph Bodmer.)
PAIGE, WILLIAM ADAMS -	3036	11th Dec. 1860	An improved shirt.
PAILLARD, AIMÉDÉE - - -	1212	17th May 1860	An improved handle or holdfast for files, chisels, and similar tools. (Patented by Marc Antoine François Mennons.)
PAILLERON, PIERRE - - -	1536	23rd June 1860	An improved apparatus for distilling.
PAINE, GEORGE - - -	824	30th March 1860	Manufacture of gunpowder.
PALLING, FRANCIS - - -	2380	2nd Oct. 1860	An improved means or apparatus for preventing candles dropping or guttering.
PALLING, FRANCIS - - -	2844	20th Nov. 1860	Fountain pens.
PALLISER, WILLIAM - - -	634	8th March 1860	Improvements in breech loading rifles and other guns, and in cartridges to be used with such like fire-arms, also in shot used with rifled guns.
PALLU, CLAUDE - - -	3181	28th Dec. 1860	Apparatus and process for producing photographic pictures without working in dark rooms.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
PALMER, CHRISTOPHER RICHARD NORRIS.	2884	24th Nov. 1860	A new portable and improved fixed signal apparatus.
PALMER, HENRY - - -	1518	22nd June 1860	Method of and apparatus for propelling ships, vessels, boats, or other craft in, on, or through the water.
PALMER, WILLIAM - - -	2617	26th Oct. 1860	Packing the pistons of cylinders.
PAPE, JEAN HENRI - - -	1841	28th July 1860	Construction of pianofortes.
PAPE, THOMAS - - -	2914	27th Nov. 1860	Circular frames for manufacturing glove and other fabrics; apparatuses for stitching and finishing the finger ends of gloves and for "boarding" gloves.
PARAF, MATTHIAS - - -	2794	14th Nov. 1860	Obtaining colouring matters for dyeing and printing. (Patented by Robert Hodgson Gratrix.)
PARAF-JAVAL, BENJAMIN - -	118	17th Jan. 1860	Improvements in extracting substances from cereal grains and some of their products, and the application of the substances extracted. (Patented by Richard Archibald Brooman.)
PARAF-JAVAL, BENJAMIN - -	1305	26th May 1860	Treating certain animal substances, in order to obtain albuminous, gummy, glutinous, and glairy products, and fat. (Patented by Richard Archibald Brooman.)
PARIENTÉ, LEON DE - - -	422	16th Feb. 1860	An improved machine for the manufacture of paper and other bags, (Patented by Thomas Green.)
PARIS, MATTHEW - - -	2427	8th Oct. 1860	Fire-arms.
PARISH, CORNELIUS - - -	550	28th Feb. 1860	Looms for weaving.
PARKER, FRANCIS - - -	1934	9th Aug. 1860	Improved coverings for the feet or parts thereof, suitable more especially as foot warmers for railway and other travellers.
PARKER, GEORGE JUBILEE - -	1037	25th April 1860	Means or apparatus for raising water and other fluids.
PARKER, JAMES - - -	2374	2nd Oct. 1860	Improvements in propelling vessels by the buoyant power of steam, hot air, and vapour in combination in rising through water.
PARKER, THOMAS - - -	889	9th April 1860	Self acting mules.
PARKES, WILLIAM SALTER - -	2418	6th Oct. 1860	A new or improved washing-machine.
PARKINSON, JOHN - - -	1008	23rd April 1860	Machinery for separating small particles of iron or steel from brass and other metals or materials.
PARLBY, JOSIAH - - -	2696	3rd Nov. 1860	Colouring or obtaining the effect of colouring and other ornamentations to surfaces in relief or partly in relief.
PARMELLE, HOMER - - -	2127	3th Sept. 1860	Manufacture of moulds and cores for the casting of cylindrical articles; machinery or apparatus employed therein.
PARNALL, HENRY - - -	3173	27th Dec. 1860	Means for promoting warmth and comfort in railway and other travelling.
PARNALL, ROBERT - - -	3173	27th Dec. 1860	Means for promoting warmth and comfort in railway and other travelling.
PARRISH, HENRY - - -	383	10th Feb. 1860	An improvement in pressure gauges, the which is also applicable to vacuum gauges.
PARRY, WILLIAM - - -	3168	27th Dec. 1860	Manufacture of chimney pots, pedestals, and such like articles made from clay or plastic materials, and machinery for that purpose.
PARSONS, GEORGE - - -	423	16th Feb. 1860	Steam-engines.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
PARSONS, GEORGE - - -	1351	1st June 1860	Manufacture of carts, waggons, and drays.
PARSONS, GEORGE - - -	2320	24th Sept. 1860	Breaks for railway carriages.
PARSONS, GEORGE - - -	2930	30th Nov. 1860	Construction of wheels.
PARSONS, PERCEVAL MOSES -	720	20th March 1860	Fire-arms; projectiles to be used therewith.
PARSONS, PERCEVAL MOSES -	1687	13th July 1860	Ordnance and fire-arms; tools for rifling the same.
PARSONS, WILLIAM - - -	872	5th April 1860	Manufacture of wrought iron.
PARTRIDGE, EBENEZER - -	844	2nd April 1860	Axles and axle-boxes.
PARTRIDGE, EBENEZER - -	1867	2nd Aug. 1860	Axles and axle-boxes.
PASCAL, JEAN BAPTISTE - -	1366	4th June 1860	Obtaining motive-power; apparatus for the same.
PASCAL, NOEL - - -	2353	28th Sept. 1860	An improved medicament to prevent and cure venereal diseases. (Patented by Henry Gilbee.)
PATERSON, ALEXANDER JOHN	1328	29th May 1860	Agricultural traction engines and implements.
PATERSON, JOHN - - -	3111	18th Dec. 1860	An improved neck tie.
PATON, JOHN - - -	1264	22nd May 1860	Machinery or apparatus for winding, lifting, and boring for mining purposes.
PATRIDGE, DAVID - - -	945	14th April 1860	An improvement in or addition to apparatuses for superheating steam.
PATTERSON, JOHN - - -	962	17th April 1860	Apparatus for churning, which apparatus is also applicable to the washing of clothes and other articles.
PATTISON, WILLIAM MEAD -	688	15th March 1860	Fountain pens and fountain penholders.
PAUL, FRÉDÉRIC - - -	1864	2nd Aug. 1860	An improvement in apparatus, applicable to turn tables, swing bridges, cranes, and other machinery acting on a pivot. (Patented by John Ryde.)
PAUL, GEORGE - - -	1269	23rd May 1860	Machinery for winding yarn or thread.
PAULET, JEAN (called JAN) -	1651	9th July 1860	Railway breaks. (Patented by Richard Archibald Brooman.)
PAULET, JEAN (called JAN) -	2604	25th Oct. 1860	Apparatuses for raising liquids. (Patented by Richard Archibald Brooman.)
PAUTARD, PAUL - - -	2228	14th Sept. 1860	Improved apparatus for supplying air to persons in water, and in mines or other places. (Communicated by Benoit Rouquayrol.)
PAVY, CHARLES JOSEPH [EMILES.	1473	16th June 1860	Storing and preserving grain; apparatus connected therewith. (Patented by William Clark.)
PAVYER, BENJAMIN - - -	1469	16th June 1860	Certain new or improved machinery for "rubbing" type. (Communicated by James Gabriel Pavyer.)
PAVYER, JAMES GABRIEL -	1407	7th June 1860	Gas regulators. (Patented by George John Cookson.)
PAVYER, JAMES GABRIEL -	1469	16th June 1860	Certain new or improved machinery for "rubbing" type. (Patented by Benjamin Pavyer.)
PAYNE, HENRY - - -	975	18th April 1860	Lowering ships' boats.
PAYNE, JOHN BELLAMY -	2979	4th Dec. 1860	Machinery for the manufacture of fishing and other nets.
PEACH, CHARLES - - -	517	25th Feb. 1860	Manufacture of wreaths or trimmings for ladies' bonnets and other articles of dress.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
PEACOCK, DAVID - - -	2195	11th Sept. 1860	Construction of wheels for traction and locomotive engines.
PEACOCK, JACOB - - -	894	10th April 1860	Looms for weaving.
PEAKE, THOMAS - - -	3022	10th Dec. 1860	An improved method of locking or "skidding" the wheels of vehicles for the purpose of retarding or arresting the progress thereof.
PEARCE, JOHN CHARLES -	2663	31st Oct. 1860	Steam-engines and boilers.
PEARCE, WILLIAM - - -	2720	6th Nov. 1860	Apparatus for ploughing land.
PEARSON, WILLIAM - - -	2893	26th Nov. 1860	Looms for weaving woollens.
PEDDER, JOHN THOMAS -	2769	12th Nov. 1860	A machine for the preservation of life in case of fire in dwelling houses and other buildings.
PEDRANT, AUGUSTE - - -	188	25th Jan. 1860	A machine for reproducing and engraving at the same time on marble, ivory, shell, all sorts of wood and other matters, the same figure in different sizes.
PEEK, ALFRED - - - -	2136	5th Sept. 1860	Treating or preparing textile materials and fabrics.
PEGG, JOHN - - - - -	494	23rd Feb. 1860	Battens employed in weaving.
PELEGRIN, JACQUES - - -	2943	30th Nov. 1860	Inodorous basins and descent pipes of glass.
PELLISSIER, LOUIS - - -	1446	13th June 1860	An improved apparatus for lifting and moving blocks of stone or other heavy materials or loads.
PENDLEBURY, JEREMIAH -	1890	4th Aug. 1860	"Temples" used in weaving textile fabrics.
PENFOLD, OLIVER - - - -	2662	31st Oct. 1860	Manufacture of candles.
PENNEY, JOHN - - - - -	379	11th Feb. 1860	Apparatuses employed for cleaning, dressing, winnowing, separating, and sifting grain and seeds and such like matters.
PENTZLIN, AUGUST - - -	808	29th March 1860	Machinery for cutting wood. (Communicated by Theodor Andreas Prale.)
PEPPÉ, GEORGE TOSCO - -	748	22nd March 1860	Manufacture of thin sheet lead coated with tin.
PEPPÉ, GEORGE TOSCO - -	1555	26th June 1860	Apparatus for keeping time, for weighing letters and other matters, and for levelling.
PERCY, WILLIAM CARTER [STAFFORD.]	410	15th Feb. 1860	Arrangements and mechanism or apparatus for the manufacture of bricks, tiles, pipes, and other articles formed of plastic materials.
PERKES, SAMUEL - - - -	33	5th Jan. 1860	Improvements in presses and modes of pressing applicable to cotton, hemp, wool, coir, hides, hay, fibres, peat, linen thread, piece goods, extracting oil, and other useful purposes.
PERKES, SAMUEL - - - -	1615	4th July 1860	Improvements in presses and modes of pressing applicable to cotton, hemp, wool, coir, hides, hay, fibres, peat, linen thread, piece goods, extracting oil, and other useful purposes.
PERKINS, ANGLIER MARCH -	2017	21st Aug. 1860	Apparatus for distilling sea and other water.
PERKINS, LOFTUS - - - -	2285	20th Sept. 1860	Surface condensers.
PERKINS, LOFTUS - - - -	2392	3rd Oct. 1860	Steam-engines.
PERRIER, LOUIS FELIX - -	44	6th Jan. 1860	Machinery for making wax-matches and wood-matches.
PERRIN, GABRIEL - - - -	2355	28th Sept. 1860	Electro-magnetic apparatus. (Patented by George Henry Birkbeck.)



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
PERRIN, JOHN - - -	1125	5th May 1860	Fire-places and flues.
PERROTT, RICHARD, junior -	2088	29th Aug. 1860	An improved mode of applying roasting-jacks to kitchen ranges and cooking stoves.
PERRY, EDWIN CRESWELL -	2039	30th Nov. 1860	Preventing accidents in or at mine shafts.
PESIER, EDMOND - - -	351	9th Feb. 1860	Treating saccharine fluids. (Patented by William Armand Gilbec.)
PETEGHEM, VAN - - -	1773	21st July 1860	Looms for weaving. (Patented by William Edward Newton.)
PETERS, CHARLES - - -	3144	22nd Dec. 1860	Looms used in the manufacture of ribbons and other fabrics.
PETIN, H. - - -	2347	27th Sept. 1860	Improvements in forging and rolling metals applicable to the manufacture of wheels, spades, shovels, axles, buffers, and other articles of wrought iron. (Patented by John Henry Johnson.)
PETIT, JOSEPH LETIERE -	2314	22nd Sept. 1860	Metallic pens and penholders.
PETITPIERRE, HENRY - -	691	15th March 1860	An improved arrangement of apparatus for working and controlling railway signal discs. (Patented by Marc Antoine François Menmons.)
PETRIE, JAMES - - -	2225	14th Sept. 1860	Steam-boilers.
PETRIE, JOHN, junior - -	920	12th April 1860	Machinery or apparatus for washing rags and other materials used in the manufacture of paper.
PETRIE, JOHN, junior - -	940	14th April 1860	Machinery or apparatus for drying warps for weaving.
PETRIE, JOHN, junior - -	2204	12th Sept. 1860	Cocks or taps for liquids.
PETRIE, WILLIAM - - -	1985	16th Aug. 1860	Improvements in the manufacture of sulphuric acid and in apparatus employed therein, parts of which improvements are applicable to the obtaining of draught, to the condensing of gases, and to the constructing of flues.
PEYRE, GUILLAUME AMÉDÉE [FILHOL.]	2371	1st Oct. 1860	An addition to or improvement in gas meters. (Patented by Michael Henry.)
PEYTON, EDWARD - - -	1003	21st April 1860	Manufacture of metallic bedsteads.
PHELPS, CHARLES HENRY -	250	31st Jan. 1860	Improved machinery for cutting dovetails. (Patented by William Edward Newton.)
PHILIPPE, JULES ALPHONSE -	1010	23rd April 1860	A new process and apparatus for bleaching fabrics and substances that can be bleached such as thread, textile plants, and paper pulp.
PHILLIPS, JOHN DAVIS - -	739	21st March 1860	Steam-engines.
PHILLIPS, RICHARD - - -	1947	11th Aug. 1860	Harvesting-machines. (Communicated by Mr. Jesse Whitehead.)
PHYSICK, HENRY VERNON -	764	24th March 1860	Electric telegraphs and apparatus connected therewith.
PIATON, CLAUDE LOUIS - -	2067	27th Aug. 1860	Machinery or apparatus for washing yarns and other textile fabrics or materials in skeins.
PIAULT, JULES - - -	1907	7th Aug. 1860	Improved apparatus for retarding carriages. (Patented by William Edward Newton.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
PIAZZA, GIUSEPPE - - -	1799	25th July 1860	Processes of and apparatus for unwinding silk from cocoons. (Patented by Marc Antoine François Mennons.)
PICKSLEY, JOHN - - -	1736	18th July 1860	Bone mills and logwood rasps.
PICKSTONE, WILLIAM - -	1333	30th May 1860	Machinery for dyeing, washing, and sizing.
PICKSTONE, WILLIAM - -	1858	31st July 1860	Manufacture of tubes or pipes.
PIDDING, WILLIAM - - -	337	8th Feb. 1860	Needles.
PIDDING, WILLIAM - - -	775	26th March 1860	Improvements in the manufacture of paper, applicable also to the manufacture of hats, bonnets, caps, and various articles of ladies' and gentlemen's wearing-apparel, furniture, boxes, ornaments, bottles, casks and various articles of utility, vehicles, houses, sailing and steam vessels and boats, in the mixture of liquids, fibrous and other substances or materials for such purposes, and in the machinery connected therewith.
PIDDING, WILLIAM - - -	1565	28th June 1860	Improvements in fire lighters, their form or shape, and the machinery or apparatus used in their manufacture.
PIERCE, THOMAS CAREY [WILLARD.	1738	18th July 1860	Power-looms for weaving.
PIERCE, WILLIAM P. - -	2261	17th Sept. 1860	Manufacture of files. (Patented by William Edward Newton.)
PIERSON, GEORGE BOWEN -	1630	5th July 1860	An improved construction of spring butt hinge. (Patented by Alfred Vincent Newton.)
PIERSON, GEORGE BOWEN -	2645	20th Nov. 1860	Construction of spring hinges. (Patented by Alfred Vincent Newton.)
PIGGOTT, WILLIAM PETER -	2957	3rd Dec. 1860	Mode of generating electric currents, manufacturing submarine telegraph cables, and the mode of transmitting signals.
PILE, JOHN - - -	1699	14th July 1860	Preservation of iron surfaces from corrosion or decay.
PILKINGTON, JOHN - - -	1803	25th July 1860	Means for protecting and making watertight exposed surfaces, such as railway arches, bridges, roofs, and other structures.
PILKINGTON, WILLIAM - -	2959	3rd Dec. 1860	Furnaces for melting glass.
PILKINGTON, WOODFORD -	2317	22nd Sept. 1860	Application of steam or highly rarefied gas or other æriform fluid to obtain motive-power for propelling and other purposes. (Patented by John Leggett Budden.)
PILLIER, JEAN EUGÈNE - -	1367	4th June 1860	Improved machinery or apparatus for manuring land. (Patented by William Edward Gedge.)
PILLINER, RICHARD BURGESS -	2698	3rd Nov. 1860	Improvements in machinery for compressing black lead or other suitable substances, part of which improvements are also applicable to packing various other materials.
PILLING, JOHN - - -	655	10th March 1860	Breaks or apparatus for stopping looms when the shuttle is caught in the warp, which is applicable to all looms with a break applied to them.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
PILON, MARTIN REGUL - -	2113	1st Sept. 1860	Manufacture and construction of fire-arms; means of loading the same and controlling more effectually the action of the fire-lock.
PINCHES, JOHN - - -	1369	4th June 1860	An improved press for embossing and stamping paper, linen, and other fabrics and substances.
PINKNEY, ROBERT - - -	1760	20th July 1860	An improved pencil-case.
PIPER, JOSEPH - - -	1393	6th June 1860	Manufacture of tin and terne plates.
PIROTTE, ALPHONSE - -	1997	17th Aug. 1860	Construction of condensers.
PIRSSON, JOSEPH POOLE -	1825	27th July 1860	Manufacture of linseed oil; apparatus for the same. (Patented by Richard Archibald Brooman.)
PIRSSON, JOSEPH POOLE -	2066	27th Aug. 1860	Melodeons and similar keyed musical instruments. (Patented by Richard Archibald Brooman.)
PITMAN, JOHN TALBOT - -	1873	3rd Aug. 1860	An improved process in the vulcanization of india-rubber and other similar substances under pressure. (Communicated by Messrs Bowen, Brown, and Chaffee.)
PITMAN, JOHN TALBOT - -	1875	3rd Aug. 1860	An improved press. (Communicated by Messrs. Bourn, Brown, and Chaffee.)
PITT, JAMES - - - -	601	5th March 1860	Apparatus for sewing-machines.
PITT, ROBERT - - - -	617	6th March 1860	Manufacture of leather; machinery for that purpose.
PITT, ROBERT - - - -	3056	12th Dec. 1860	Apparatus employed in the manufacture of leather.
PITTS, SAMUEL - - - -	3063	13th Dec. 1860	Billiard-tables.
PIZZI, PAUL - - - -	1676	11th July 1860	Preparing and treating the surfaces of the interiors and exteriors of houses, edifices, monuments, and other buildings, to imitate polished marble or stone, also rendering them impervious to the action of the atmosphere and other elements.
PLATT, HENRY - - - -	767	24th March 1860	Calendars for clocks or other timekeepers. (Patented by William Edward Newton.)
PLATT, JOHN - - - -	131	18th Jan. 1860	Machinery or apparatus for spinning, winding, and doubling cotton and other fibrous materials.
PLATT, JOHN - - - -	922	13th April 1860	Mules for spinning and doubling.
PLATT, JOHN - - - -	2423	6th Oct. 1860	Machinery or apparatus for forging or shaping cranks or bars of metal.
PLISSON, PAUL - - - -	1653	9th July 1860	Construction of portable ovens. (Patented by Alfred Vincent Newton.)
PLUM, THOMAS WILLIAM -	202	26th Jan. 1860	Preparing and fixing iron and other metal plates to ships and other structures.
PLUM, THOMAS WILLIAM -	1941	10th Aug. 1860	Improvements in fixing tyres upon wheels and chairs upon sleepers, part of which is applicable to rivetting generally.
POCHIN, HENRY DAVIS - -	2846	21st Nov. 1860	An improved material for building and other purposes.
POELMAN, EDWARD - - -	789	27th March 1860	Improvements in those musical instruments known as "German concertinas."



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
POIRIER, EDOUARD LOUIS -	2250	15th Sept. 1860	Safety locks. (Patented by William Edward Newton.)
POIRIER, LAURENT - - -	1510	21st June 1860	Machinery or apparatus for the manufacture of envelopes. (Patented by William Clark.)
POIRIER, LAURENT - - -	1758	19th July 1860	Stamping or embossing presses. (Patented by William Clark.)
POIVRET, JULES - - -	431	17th Feb. 1860	Improvements in furnaces for the prevention of smoke. (Patented by John Henry Johnson.)
POLE, WILLIAM - - -	2768	10th Nov. 1860	Fish joints of railways.
POLLIT, RICHARD - - -	1644	9th July 1860	Construction of steam-boilers.
POLLOCK, WILLIAM - - -	2368	1st Oct. 1860	Improved apparatus for spinning or twisting.
POMBLA, CHARLES JACQUES [Ainé.]	3099	17th Dec. 1860	Improvements applicable to fishing nets. (Patented by Michael Henry.)
POMEROY, EBENEZER GREEN -	2087	29th Aug. 1860	Manufacture of iron and steel. (Patented by William Edward Newton.)
PONCON-JEANDELIZE, B. -	207	27th Jan. 1860	An improved eye flap designed to stop horses which have taken fright, by depriving them of sight, and which he calls "blinding eye flap," for which he has obtained in France a Patent for Invention and improvement for 15 years, bearing the date of the 19th August 1859, No. 41,909.
POPE, FREDERICK ALEXANDER	654	10th March 1860	Connecting brooms and brushes to their sticks or handles.
POPE, JOSEPH TUNNICLIFF -	1551	26th June 1860	Improvements in the articles technically known as "flys" or "flyers" used in the process of spinning and preparing woollen, worsted, cotton, and other fibrous materials.
PORTER, HENRY - - -	2327	25th Sept. 1860	Axles for railway carriages and other purposes. (Patented by John Robinson Porter.)
PORTER, JOHN ROBINSON -	2327	25th Sept. 1860	Axles for railway carriages and other purposes. (Communicated by Henry Porter and William Edward Jones.)
POTTER, HAROLD - - -	2136	5th Sept. 1860	Treating or preparing textile materials and fabrics.
POTTER, JAMES - - -	166	23rd Jan. 1860	Self acting mules.
POUCHAUT, PEDRO - - -	948	16th April 1860	An improved apparatus to be employed in the roasting and preparation of coffee, cocoa, and chicory.
POULTER, HENRY WILLIAM -	1763	20th July 1860	Arrangement and construction of printers' composing cases and the frames used therewith.
POUSSIER, CONSTANT PIERRE [ELEONORE.]	1951	13th Aug. 1860	Manufacture of alkaline or other bichromates.
POVAH, SAMUEL - - -	1675	11th July 1860	An improved combined portable steam-engine winch, and apparatus or machinery for operating the pumps and parts of the rigging, warping, raising the anchor, and for other uses on board ships where power is required, parts of the same being applicable for like uses separately.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
POWELL, HENRY BUCKWORTH	842	2nd April 1860	A moveable stud or button.
POWERS, HIRAM - - -	1221	17th May 1860	Improvements in vices, part of which improvements is applicable to screw wrenches, spanners, turning lathes, and other tools and machines. (Patented by Alfred Buckingham Ibbotson.)
PRADEL, HENRY AUGUSTE -	687	15th March 1860	Twisting fibrous materials; apparatus employed therein. (Patented by Michael Henry.)
PRADEL, HENRY AUGUSTE -	1697	13th July 1860	Improvements in looms and in the jacquard apparatus of looms. (Patented by Michael Henry.)
PRALE, THEODOR ANDREAS -	808	29th March 1860	Machinery for cutting wood. (Patented by August Pentzlin.)
PRALE, THEODOR ANDREAS -	2275	19th Sept. 1860	Apparatus for preparing saws. (Patented by Edmund Hunt.)
PRANG, LOUIS - - -	1757	20th July 1860	Construction of parts of umbrellas and parasols, (Patented by Charles Wenzel Hühnel.)
PRATER, CHARLES - - -	752	23rd March 1860	Ammunition, bayonet, and sword belts; pouches to be worn therewith.
PRATT, JOSEPH FRANCIS -	2990	6th Dec. 1860	Instruments for receiving and transmitting sound, particularly adapted to the relief of deafness.
PREDAVALLE, BARTOLOMMEO -	1458	15th June 1860	A new mode of and apparatus for producing and obtaining motive-power.
PRENTICE, MANNING - -	712	17th March 1860	Manufacture of hydrated oxides and salts of iron, and salts of the fixed alkalis.
PRENTICE, MANNING - -	2296	20th Sept. 1860	Treating phosphoric matters and obtaining products therefrom.
PRENTISS, ELIJAH FREEMAN -	2619	26th Oct. 1860	Cars or carriages to be run on street railways or tramways.
PRENTISS, E. FREEMAN - -	2671	1st Nov. 1860	Improvements in the combination of chemical materials for scouring, bleaching, and dyeing wool, cotton, silk, and other materials.
PRENTISS, E. FREEMAN - -	2707	5th Nov. 1860	Combination of chemical materials forming a "mordant" for dyeing wool and woollen goods.
PRENTISS, ELIJAH FREEMAN -	2708	5th Nov. 1860	A new detergent. - H
PRESTON, FRANCIS - - -	1095	1st May 1860	Certain improvements in breech loading fire-arms and in projectiles, also in the machinery employed in manufacturing projectiles.
PRESTON, FRANCIS - - -	1500	20th June 1860	Machinery for shaping and cutting files and rasps.
PRESTON, FRANCIS - - -	2753	8th Nov. 1860	Projectiles for fire-arms and ordnance.
PRESTON, THOMAS LOVELL -	3106	18th Dec. 1860	Manufacture of metallic bedsteads, chairs, and couches, and other articles of like manufacture.
PREVOSTÉ, OSCAR - - -	1215	17th May 1860	An improved railway break. (Patented by Marc Antoine François Menons.)
PRICE, ABBEY H. - - -	600	5th March 1860	An improved ruffle and sewing-machine for producing the same, applicable also to ordinary stitching. (Patented by John Henry Johnson.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
PRICE, BENJAMIN - - -	1449	13th June 1860	Ovens for baking.
PRICE, CYRUS - - -	598	5th March 1860	Locks and latches.
PRICE, GEORGE - - -	1158	11th May 1860	Locks.
PRICE, GEORGE - - -	2211	13th Sept. 1860	Manufacture of wrought iron drill-proof safes.
PRICE, GEORGE - - -	2447	9th Oct. 1860	Manufacture or construction of metallic armour for vessels of war, land defences shields for ordnance, mantellets, &c.
PRICE, GEORGE - - -	2449	9th Oct. 1860	Metallic targets.
PRICE, JOHN - - -	1512	21st June 1860	Signal lanterns.
PRICE, WILLIAM - - -	3135	21st Dec. 1860	Manufacture of articles called shives, tits, bungs, and corks or other conical bodies, whether made out of wood, cork, or any other substance.
PRINCE, ALEXANDER - -	6	2nd Jan. 1860	Construction of pianofortes. (Communicated by Dr. Hürliman.)
PRINCE, ALEXANDER - -	3089	15th Dec. 1860	Steam-engines. (Communicated by François Joseph de Bayelt.)
PRINCE, FREDERIC WALLER -	1291	24th May 1860	Fire-arms and ordnance.
PRITCHARD, WILLIAM HARPER	1654	9th July 1860	An improved apparatus for amusing and exercising children, and assisting them in learning to walk.
PRITTY, HENRY - - -	2037	24th Aug. 1860	Apparatus used to damp paper for copying letters and other documents.
PROCTER, THOMAS - - -	35	5th Jan. 1860	Sewing-machines.
PROCTER, THOMAS - - -	1869	2nd Aug. 1860	Sewing-machines.
PROSSER, WILLIAM - - -	2600	25th Oct. 1860	Apparatus employed in the production of light.
PROU-GAILLARD, AUGUSTE -	321	7th Feb. 1860	Vessels for containing solid or fluid matters of all sorts.
PROUVOST, AUGUSTE - -	438	17th Feb. 1860	Machinery or apparatus for twisting, doubling, and winding thread. (Patented by John Henry Johnson.)
PULLAN, ABRAHAM - - -	892	4th April 1860	Construction of steam, water, and other fluid gauges.
PULLAN, ABRAHAM - - -	1180	12th May 1860	Steam generators; means of or apparatus for superheating steam and heating the feed water.
PULS, FRANCIS - - -	3161	26th Dec. 1860	Obtaining products from coal, gas tar, gas, pitch, coal tar, asphalt, resin, and other bituminous and resinous substances.
PURCHAS, ALBERT - - -	2028	23rd Aug. 1860	Application of breaks to railway carriages. (Patented by Samuel Purchas.)
PURCHAS, SAMUEL - - -	2028	23rd Aug. 1860	Application of breaks to railway carriages. (Communicated by Albert Purchas.)
PURDIE, JAMES - - -	2351	28th Sept. 1860	An improved method of mounting and giving motion to fire-bars.
PURNELL, BENJAMIN - -	376	11th Feb. 1860	Improvements in hot water apparatus applicable to the heating of buildings, supplying baths and laundries, and other similar uses.
PYM, JOHN - - -	3043	11th Dec. 1860	Railway sleepers.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
<b>Q.</b>			
QUINQUARLET, HILAIRE [ADRIEN.]	1542	25th June 1860	Improvements in the needles used in machinery for manufacturing ribbed stocking fabric. (Patented by George Davies.)
<b>R.</b>			
RABLAT, C. F. - - -	1598	3rd July 1860	An improved navigable balloon or aërostatic ship. (Patented by Charles Stevens.)
RACEY, WILLIAM HENRY -	2398	3rd Oct. 1860	Lamps for burning coal oils and other hydrocarbons containing an excess of carbon. (Patented by William Edward Newton.)
RADCLIFFE, JACOB HENRY -	2072	28th Aug. 1860	Lubricating cans or vessels.
RADCLIFFE, JACOB HENRY -	2828	17th Nov. 1860	Lubricating or oiling vessels; apparatus connected therewith.
RADFORD, JOB - - -	3006	7th Dec. 1860	Composition or compositions to be employed in the manufacture of fire-bricks, fire-clay, lumps, blocks, retorts, and for all the purposes for which ordinary fire clay is now used, part or parts of which compositions may also be employed as a substitute for emery.
RAE, JAMES - - -	651	10th March 1860	Improvements in constructing iron ships, part of which improvements is applicable to the rivetting of boiler plates and others.
RAE, MARTIN - - -	185	23rd Jan. 1860	Roughening or obscuring glass globes, tubes, or other vessels.
RAFFERTY, PHILIP - - -	1336	30th May 1860	Machinery for preparing and spinning hemp and similar fibrous materials. (Patented by William Edward Newton.)
RAHILL, JAMES - - -	1845	30th July 1860	Quadrants, sextants, or other similar instruments to which artificial horizons are applicable.
RAILTON, TIMOTHY - -	1118	4th May 1860	Apparatus employed in the manufacture of cap or bonnet fronts.
RALSTON, WILLIAM HENRY -	2804	15th Nov. 1860	Manufacture of soda ash.
RALSTON, WILLIAM HENRY -	2861	22nd Nov. 1860	Manufacture of hydrate of soda.
RAMMELL, THOMAS WEBSTER	356	10th Feb. 1860	Pneumatic railways and tubes.
RAMMELL, THOMAS WEBSTER	2718	6th Nov. 1860	Improvements in centrifugal discs revolving in air, water, and other fluids, and in the application of motive-power by such discs.
RAMSAY, GEORGE MORTON -	2644	29th Oct. 1860	An improved washing-machine. (Patented by Alfred Vincent Newton.)
RAMSBOTTOM, JOHN - -	1527	23rd June 1860	Supplying the tenders or tanks of locomotive engines with water.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
RAMSBOTTOM, JOHN - -	2460	10th Oct. 1860	An improved mode of lubricating the pistons and valves of steam-engines and other machines actuated by steam.
RAMSDEN, WILLIAM GRAN- [DAGE.	589	3rd March 1860	An improved boiler or apparatus for generating and superheating steam, or heating water or other fluids under pressure.
RAMSELL, WILLIAM - -	2524	17th Oct. 1860	Improvements in the manufacture of boiler plates, also applicable generally for the resistance of steam or internal pressure; apparatus or machinery employed therein.
RAMSPACHER, THEODORE -	187	25th Jan. 1860	Preparing wire-gauze to render it applicable to various purposes.
RANKIN, GEORGE - -	558	29th Feb. 1860	Paddle-wheels.
RANKIN, JOHN - - -	900	10th April 1860	Mills for grinding bones.
RANSFORD, ARTHUR - -	2310	13th Sept. 1860	Galleries or supports for gas burners.
RANSOME, FREDERICK - -	2142	5th Sept. 1860	Preserving stone, bricks, and other porous building materials; cementing porous and other matters in manufacturing blocks and other articles thereof.
RANSOME, ROBERT JAMES -	2055	25th Aug. 1860	Apparatus used in producing moulds for casting.
RATCLIFF, EDMUND - -	2737	7th Nov. 1860	Lamps for lighting vestibules, halls, or other like places.
RATCLIFF, JOSEPH - - -	2737	7th Nov. 1860	Lamps for lighting vestibules, halls, or other like places.
RATEL, PIERRE CHARLES -	1783	24th July 1860	Apparatus for setting and sharpening scythes and other like instruments. (Patented by William Clark.)
RAWSON, HENRY - - -	1083	28th April 1860	Machinery for combing wool and other fibres.
RAYNAL, EDOUARD EUGÈNE -	1800	25th July 1860	Etching on zinc. (Patented by Marc Antoine François Menmons.)
RAYNAUD, FRANÇOIS - -	2604	25th Oct. 1860	Apparatuses for raising liquids. (Patented by Richard Archibald Brooman.)
READ, ROBERT - - -	1188	15th May 1860	Process of waterproofing fabrics for garments so as to allow perspiration to pass through the same.
READ, ROBERT junior - -	1996	17th Aug. 1860	Manufacture of waterproof fabrics permeable to air.
READE, WILLIAM - - -	1509	21st June 1860	Apparatus for singeing and preparing the skins of pigs previous to curing.
READE, WILLIAM - - -	1547	25th June 1860	Apparatus for carbonizing or partially charring the skins of pigs previous to curing.
READMAN, WILLIAM - - -	385	13th Feb. 1860	An improved apparatus for communicating motion to roller blinds, maps and other articles.
REBOUR, CLAUDE JOSEPH [NAPOLÉON.	1581	30th June 1860	A new motive-power :—"Rebour's motor."
REDFERN, JOHN - - -	495	23rd Feb. 1860	Construction of steam-boilers for increasing the durability thereof, and also for economizing fuel.
REDGATE, JAMES - - -	1406	7th June 1860	Manufacture of bobbin net or lace in bobbin net machines.
REDGATE, WILLIAM - - -	2076	28th Aug. 1860	Apparatus employed in bobbin net or twist lace machines.

Red]

## ALPHABETICAL INDEX OF PATENTEEES

[Ren

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
REDGRAVE, WILLIAM - - -	1897	6th Aug. 1860	An improved inflated undulating artificial bust.
REDRUP, GEORGE - - -	272	2nd Feb. 1860	Means of and apparatus for obtaining and applying motive-power whereby perpetual motion may be obtained.
REDWOOD, THEOPHILUS -	1433	12th June 1860	Manufacture of paper.
REECE, REES - - -	2272	18th Sept. 1860	Treating lignite and certain bituminous mineral substances so as to obtain products therefrom.
REED, CHARLES HOLLOWAY -	174	24th Jan. 1860	Construction of anchors.
REED, JAMES - - -	1964	14th Aug. 1860	Pianofortes.
REESE, JACOB - - -	2473	11th Oct. 1860	Furnaces. (Patented by Frederick Collier Bakewell.)
REEVE, AUGUSTUS - - -	2486	12th Oct. 1860	An improved fastening for window shutters and blinds. (Patented by William Edward Newton.)
REEVES, CHARLES - - -	3069	13th Dec. 1860	Breech loading fire-arms.
REEVES, JOHN - - -	2922	28th Nov. 1860	Construction of ships.
REEVES, JOHN FRY - - -	2797	14th Nov. 1860	Manufacture of paper.
REID, ANDREW - - -	74	11th Jan. 1860	Shirts.
REID, GEORGE - - -	2452	9th Oct. 1860	Ventilating houses, buildings, ships and structures generally; apparatus for ascertaining the state of the atmosphere in the said houses, buildings, ships and structures.
REID, HENRY - - -	1116	4th May 1860	Hoops for hooping casks, barrels and such like articles.
REID, JAMES - - -	1146	9th May 1860	Electric telegraph conductors.
REID, ROBERT NICHOL - -	1603	3rd July 1860	Insulators for electric telegraph purposes.
REID, THOMAS - - -	1370	4th June 1860	Machinery; apparatus or means for actuating or working railway breaks.
REIDY, JAMES - - -	820	30th March 1860	A machine for breaking stones and other hard substances.
REINHARDT, ANTON CHRISTOPHER LUDWIG.	2258	17th Sept. 1860	Brewing; apparatus employed therein. (Patented by William Hensman Teulon.)
REISS, JOSEPH - - -	1930	9th Aug. 1860	Treatment of food for cattle; machinery or apparatus employed therein. (Patented by Anton Neumann.)
REITHOFFER, JOHANN NEPO-MUCK.	986	19th April 1860	Obtaining of light; apparatus employed therein. (Patented by Josef Franz Mayr.)
REITHOFFER, JOHANN NEPO-MUCK.	2546	18th Oct. 1860	Obtaining of light; apparatus employed therein. (Communicated by Maurice Wesolowski.)
RÉMOND, ALFRED HENRY -	1059	27th April 1860	Manufacture of metallic boxes or vessels used to contain preserved alimentary provisions or other substances; apparatuses and machinery employed therein. (Patented by Leopold D'Aubréville.)
RENAULT, CHARLES JEAN BAPTISTE.	2098	30th Aug. 1860	Manufacture of shirts and chemises.
RENDELL, ALEXANDER MEADOWS.	111	16th Jan. 1860	Construction and arrangement of ships of war.
RENNEL, PAUL WALKER -	2734	7th Nov. 1860	Method of and apparatus for treating green, semigreen, or undried vegetables or plants, in order to reduce their fibrous portions to a pulp; application of the said pulp when so made to the manufacture of paper.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
RENNIE, GEORGE BANKS -	748	22nd March 1860	Construction and mode of working and employing floating platforms, pontoons, or docks for supporting ships or other vessels.
RENNIE, GEORGE BANKS -	3132	20th Dec. 1860	Improvements in machinery, apparatus, and works of construction intended to be employed, and the mode or method of using or employing the same for the purpose of examining or repairing ships and other vessels.
RENSHAW, EDWARD GREEN- [HILL.	785	26th March 1860	A machine for cutting or producing from wood certain articles called "machine lights" or wood spills or lighters used for lighting pipes and candles and other similar purposes.
RENSHAW, JOSEPH - - -	1823	27th July 1860	Machinery or apparatus for finishing velvets, velveteens, and other pile fabrics.
RENTON, AMHERST HAWKER -	2635	29th Oct. 1860	Apparatus employed in the production of light.
RENWICK, E. S. - - -	2062	27th Aug. 1860	Thrust bearings for propeller shafts and for other purposes. (Patented by George Tomlinson Bousfield.)
RENWICK, E. S. - - -	2063	27th Aug. 1860	Building water craft. (Patented by George Tomlinson Bousfield.)
RENWICK, E. S. - - -	2064	27th Aug. 1860	Improvements in stuffing-boxes and the packing thereof for the piston rods of steam-engines and for other purposes. (Patented by George Tomlinson Bousfield.)
RENWICK, E. S. - - -	2065	27th Aug. 1860	Surface blow-offs for steam-boilers. (Patented by George Tomlinson Bousfield.)
REPELIN, LOUIS JOSEPH - -	895	10th April 1860	An expeditious mode of tanning.
RESTON, SAMUEL - - -	2494	13th Oct. 1860	An improved rotatory engine.
RÉVY, JULIAN JOHN - - -	2045	24th Aug. 1860	An improved construction of screw propeller.
REYNAUD, LOUIS PROSPER -	2403	4th Oct. 1860	An improved buckle.
REYNOLDS, EDWARD DUNKLEY	483	22nd Feb. 1860	An improved rifle ball. (Communicated by William Stow.)
REYNOLDS, GEORGE WAIDE -	2450	9th Oct. 1860	New or improved machinery for the manufacture of baskets and wicker work.
REYNOLDS, JOHN - - -	271	2nd Feb. 1860	Constructing an endorsing, printing, and stamping press.
REYNOLDS, JOHN, junior - -	705	16th March 1860	Manufacture of wire or metal netting; machinery employed therein.
REYNOLDS, JOHN GEORGE -	3058	13th Dec. 1860	Coating or covering the surfaces of smoking pipes and other articles, fictile, metallic, or otherwise, to obtain ornamental and useful effects.
REYNOLDS, WILLIAM - - -	2667	1st Nov. 1860	Manufacture of boots and shoes.
RHODES, BENJAMIN - - -	2489	12th Oct. 1860	Improvements in machinery and in apparatus connected therewith for the manufacture of bituminous pipes and other articles.
RHODES, GEORGE - - -	2489	12th Oct. 1860	Improvements in machinery and in apparatus connected therewith for the manufacture of bituminous pipes and other articles.
RHODES, GODFREY - - -	2384	2nd Oct. 1860	Improvements in tent frames, and in rendering coverings for tent frames and other textile fabrics and fibres and surfaces waterproof.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
RHODES, WILLIAM HENRY -	1402	7th June 1860	Machinery or apparatus for roving, spinning, and doubling cotton, wool, flax, and other fibrous materials. (Patented by Edward Joseph Hughes.)
RICE, WILLIAM - - -	2048	25th Aug. 1860	Construction of bomb shells. (Patented by George Davies.)
RICHARD, ALBERT C. - -	946	16th April 1860	Manufacture of improved machine belting, and apparatus connected therewith.
RICHARD, FELIX - - -	1185	14th May 1860	Construction of metallic barometers. (Patented by William Edward Newton.)
RICHARD, FELIX - - -	2511	15th Oct. 1860	Tools or machines for the manufacture of certain kinds of metallic tubes. (Patented by William Edward Newton.)
RICHARDS, JOHN - - -	2601	25th Oct. 1860	A new or improved break for arresting or stopping carriages or trucks on inclines when by the breaking of coupling links or other accident the said carriages or trucks are in danger of running down the said inclines.
RICHARDS, WESTLEY - -	1670	28th June 1860	Improvements in ordnance, also in cartridges and cap holders.
RICHARDS, WILLIAM - -	639	9th March 1860	Cleansing, rinsing, or scouring lace, hosiery, or other articles, whether made of silk, cotton, or other material from extraneous matter.
RICHARDSON, GEORGE - -	2102	31st Aug. 1860	An improved instrument to be used for ascertaining distances.
RICHARDSON, GEORGE - -	3053	12th Dec., 1860	Apparatus for enabling guards and engine drivers of railway trains to communicate with one another.
RICHARDSON, THEODORE [MANSFIELD.]	2413	5th Oct. 1860	A new and useful or improved steering apparatus for navigable vessels.
RICHARDSON, THOMAS - -	703	16th March 1860	Treating organic and other substances containing phosphate of lime.
RICHARDSON, THOMAS - -	712	17th March 1860	Manufacture of hydrated oxides and salts of iron and salts of the fixed alkalies.
RICHARDSON, THOMAS - -	733	21st March 1860	Manufacture of salts of alumina.
RICHARDSON, THOMAS - -	1608	3rd July 1860	Purifying coal gas.
RICHARDSON, THOMAS - -	2296	20th Sept. 1860	Treating phosphoric matters and obtaining products therefrom.
RICHARDSON, THOMAS - -	2299	21st Sept. 1860	Treatment of bones; manufacture of paper.
RICHARDSON, THOMAS - -	2961	3rd Dec. 1860	Manufacture of paper.
RICHARDSON, WILLIAM - -	821	30th March 1860	Apparatus for the production of coal gas.
RICHARDSON, WILLIAM - -	1418	8th June 1860	An improved method of joining and fixing together drain, water, or gas pipes made of burnt clay or other earthy, vegetable, or mineral matter, thereby rendering them air and water tight and preventing leakage.
RICHARME, PIERRE - -	672	14th March 1860	A pneumatic telegraph. (Patented by José Luis.)
RICHER, FRANÇOIS CHARLES -	1375	5th June 1860	Improvements in breech loading fire-arms and in their cartridges.
RICHEUX, LEWIS LE - -	1785	24th July 1860	Means of attaching buttons or studs to articles of clothing or other similar articles; buttons or studs to be adapted thereto.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
RICKARD, JOHN - - -	555	29th Feb. 1860	Manufacture of chenille and other piled fabrics; machinery connected therewith.
RICKARD, WILLIAM - -	555	29th Feb. 1860	Manufacture of chenille and other piled fabrics; machinery connected therewith.
RICKETT, THOMAS - - -	2415	5th Oct. 1860	Locomotive engines for common roads.
RIDDELL, JOSEPH HADLEY -	2393	3rd Oct. 1860	Boilers.
RIDGE, SAMUEL - - -	1163	11th May 1860	Process of ageing printed woven fabrics.
RIDINGS, ALFRED - - -	682	14th March 1860	Steam boilers and engines; apparatus connected therewith.
RIDINGS, WILLIAM COLLINSON	992	20th April 1860	Machinery or apparatus for reading and repeating designs for perforating cards or paper for jacquard weaving.
RIDLEY, JOHN - - -	2710	5th Nov. 1860	Reaping and mowing machines.
RIDLEY, JOHN - - -	2809	15th Nov. 1860	An improved method of effecting the combustion of fuel and of products arising therefrom.
RIDSDALE, JOSEPH - - -	2526	17th Oct. 1860	Apparatuses for signalling, particularly applicable to marine engine room telegraphs.
RIFF, CHARLES AUGUSTE -	1755	19th July 1860	Valve apparatus for regulating the flow of steam and other fluids. (Patented by William Clark.)
RIGBY, JOHN - - -	899	10th April 1860	Guns and other fire-arms; cartridges to be used therewith.
RIGBY, JOHN - - -	3140	21st Dec. 1860	Breech loading fire-arms and cartridges.
RIGBY, WILLIAM - - -	626	7th March 1860	Steam-engines.
RIKLI-VALET, CHARLES -	1217	17th May 1860	A system of chromato-topo-chronographic charts intended to facilitate the study of universal history and chronology. (Patented by George Davies.)
RIMINGTON, WILLIAM -	855	3rd April 1860	Box hinges for swing doors.
RIMINGTON, WILLIAM, junior -	855	3rd April 1860	Box hinges for swing doors.
RIPLEY, ABRAHAM - - -	244	31st Jan. 1860	The application of the shavings, parings, and refuse of hides and leather to a new manufacture; process and mode of treating or operating the same in order to produce the said new article or fabric.
RIPLEY, ABRAHAM - - -	698	16th March 1860	Mode and process of treating the shavings, parings, and refuse of hides and leather; process and mode of treating or operating upon these and waste leather in order to produce a new article or fabric.
RIPLEY, ABRAHAM - - -	1865	2nd Aug. 1860	Mode and process of treating the waste and refuse of leather; mode of treating and operating upon these in order to form a new article or fabric.
RIPLEY, ABRAHAM - - -	2091	30th Aug. 1860	The amalgamation of certain materials forming a plastic composition applicable to works of the fine arts, building purposes, imitations of marbles, ancient carvings, and various other uses.
RIPOCHE, A. E. - - -	1749	19th July 1860	Producing spirit from rice, maize, barley, or other grain. (Patented by Isaac Noah Davis.)
RISSE, FRANCIS JOSEPH -	1691	13th July 1860	Gun locks.
RISSE, FRANCIS JOSEPH -	1692	13th July 1860	Pressure gauges.
RITCHIE, ALEXANDER -	1015	24th April 1860	An improved system of book-keeping.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
RITCHIE, ALEXANDER -	1218	17th May 1860	Improvements in steam-boiler and other furnaces, and in the prevention of smoke.
RITCHIE, ALEXANDER -	1784	24th July 1860	Improvements in steam-boiler and other furnaces or fireplaces, in pyrometers, and in the prevention of smoke.
RIVES, JACQUES -	1887	3rd Aug. 1860	Looms for weaving; preparing cards for the same.
RIVIÈRE, MARCELIN -	1983	15th Aug. 1860	Improved machinery or apparatus for obtaining and applying motive-power.
ROBERTS, WILLIAM GREAVES	2379	2nd Oct. 1860	Machinery or apparatus in the manufacture of fabrics made on warp machines.
ROBB, JOHN -	2916	28th Nov. 1860	Gas stoves.
ROBBINS, S. E. -	1451	13th June 1860	An improved construction of weighing-machine. (Patented by Alfred Vincent Newton.)
ROBERT, EUGÈNE LOUIS -	2140	5th Sept. 1860	Improved cylinders for laminating metals. (Patented by William Edward Gedge.)
ROBERTS, GEORGE -	2692	3rd Nov. 1860	Construction of steam-boilers; flues connected therewith.
ROBERTS, JOHN -	2360	29th Sept. 1860	An improved mode of and apparatus for harvesting corn and other crops, and ventilating granaries.
ROBERTS, JOSEPH -	1863	1st Aug. 1860	A continuous or ratchet spanner.
ROBERTS, MARTYN JOHN -	318	7th Feb. 1860	Breech loading fire-arms.
ROBERTS, MARTYN JOHN -	1131	7th May 1860	Breech loading fire-arms.
ROBERTS, RICHARD -	990	20th April 1860	Punching-machines.
ROBERTS, RICHARD -	2518	16th Oct. 1860	Marine steam-engines; machinery and apparatus connected therewith.
ROBERTS, SAMUEL -	500	24th Feb. 1860	Steam-engines.
ROBERTS, SAMUEL -	1771	21st July 1860	Harrows.
ROBERTS, SAMUEL -	2508	15th Oct. 1860	Steam-engines.
ROBERTS, SAMUEL -	2899	26th Nov. 1860	Harrows.
ROBERTS, THOMAS -	3011	8th Dec. 1860	Construction of ships and floating batteries; rendering them capable of resisting the destructive force of shot, shell, and other missiles.
ROBERTS, WILLIAM -	2781	13th Nov. 1860	Pumps.
ROBERTSON, ANDREW -	1046	26th April 1860	Steam-boiler furnaces.
ROBERTSON, ANDREW -	1166	11th May 1860	Preventing smoke.
ROBERTSON, ANDREW -	1218	17th May 1860	Improvements in steam-boiler and other furnaces, and in the prevention of smoke.
ROBERTSON, ANDREW -	1784	24th July 1860	Improvements in steam-boiler and other furnaces or fireplaces, in pyrometers, and in the prevention of smoke.
ROBERTSON, JAMES -	847	3rd April 1860	Construction of furnaces or fireplaces.
ROBERTSON, PATRICK -	298	4th Feb. 1860	Improvements in brewing beer, ale, and porter, also in separating brewers' worts from grain and beer, ale and porter from yeast and other matters, and also in apparatus used for these and like purposes.
ROBERTSON, ROBERT -	2909	27th Nov. 1860	Machinery or apparatus for preparing asphalte.
ROBERTSON, WILLIAM	1244	21st May 1860	A new method of economising water passing through canals when such water is used for dragging boats or otherwise.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
ROBERTSON, WILLIAM -	2791	14th Nov. 1860	Mules for spinning.
ROBINSON, C. L. -	2108	31st Aug. 1860	Compositions for tanning skins and hides of all descriptions. (Patented by William Edward Newton.)
ROBINSON, CHARLES WILLIAM	3123	19th Dec. 1860	An invention for the singeing of the hairs off pigs after being killed, without letting the flames or smoke from the fires come in direct contact with the pig.
ROBINSON, GEORGE -	88	12th Jan. 1860	Manufacture of carbonate of lead and of chlorine.
ROBINSON, GEORGE -	1309	28th May 1860	Manufacture of salts and preparations of ammonia.
ROBINSON, JOHN -	80	12th Jan. 1860	Furnaces and apparatus to be used therein.
ROBINSON, JOHN -	2399	3rd Oct. 1860	Improvements in machinery commonly called log frames for sawing timber.
ROBINSON, JOHN THOMAS -	2378	2nd Oct. 1860	Screw gill apparatus for combing wool and other fibrous materials.
ROBINSON, JOSEPH -	3123	19th Dec. 1860	An invention for the singeing of the hairs off pigs after being killed, without letting the flames or smoke from the fires come in direct contact with the pig.
ROBINSON, LUTHER -	168	23rd Jan. 1860	Improved apparatus for regulating the delivery of yarn from yarn beams. (Patented by Alfred Vincent Newton.)
ROBINSON, RICHARD ALEX- [ANDER.	36	5th Jan. 1860	Sugar mills.
ROBINSON, THOMAS -	352	9th Feb. 1860	Manufacture of soda.
ROBINSON, THOMAS -	2364	29th Sept. 1860	Machinery for packing soda ash and other matters or substances in casks and other vessels.
ROBINSON, WILLIAM -	2561	20th Oct. 1860	Apparatus for grinding or sharpening the cards used in carding fibrous materials.
ROBSON, JAMES, junior -	3009	8th Dec. 1860	Mineral-oil lamps.
ROBSON, WILLIAM EVANS -	2185	10th Sept. 1860	Application of an improved elastic material for springs or cushions on the chairs of railways and tramroads or in any other position, to prevent the friction caused by the working of iron on iron or other metal substances.
ROCHER, LAURENT -	291	3rd Feb. 1860	Tanning. (Patented by Richard Archibald Brooman.)
ROECKNER, CARL HEINRICH -	316	6th Feb. 1860	Construction of mill stones for grinding.
ROGER, GUSTAVE VICTOR -	2775	13th Nov. 1860	An improved manufacture of coverings for the head. (Patented by Marc Antoine François Menons.)
ROGER, JULES PARFAIT -	20	4th Jan. 1860	A rotatory vice applicable for the manufacture of shoes and all objects of art or industry generally made by hand.
ROGERS, CALVIN B. -	2301	21st Sept. 1860	An improved floor skate. (Communicated by Reuben Shaler.)
ROGERS, JASPER WHEELER -	908	11th April 1860	Improved means of and apparatus for collecting the excrement of towns and villages, and for facilitating the drainage of houses.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
ROGERS, JASPER WHEELER -	919	12th April 1860	An improved mode of draining peat mosses so as to render the peat obtained therefrom more useful as fuel, also improved means of and apparatus for drying and preparing the peat for fuel.
ROGERS, JASPER WHEELER -	2482	11th Oct. 1860	Improved means of and apparatus for collecting the excrement of towns and villages, and for facilitating the drainage of houses.
ROGERS, JASPER WHEELER -	2487	12th Oct. 1860	Mode of and apparatus for preparing peat for fuel.
ROGERS, ROBERT - - -	1954	13th Aug. 1860	Manufacture of boots particularly adapted to military purposes.
ROGERS, SAMUEL BALDWIN -	1715	16th July 1860	Smelting of iron ores.
ROGUIER, CHARLES LOUIS -	2044	24th Aug. 1860	Apparatus used in reproducing designs in tapestry or wool work. (Patented by William Clark.)
ROLA, VINCENT - - -	870	5th April 1860	Improvements in musical notation or symbolizing musical sounds to be printed or represented on paper or other material, with a view to facilitate the reading of music.
ROLLASON, ALEXANDER - -	2249	15th Sept. 1860	Combining and mixing certain solutions of pyroxyline with animal, mineral, and vegetable substances, by which its quality is altered in such manner as to produce hard, resistant, adhesive, plastic, or resilient compounds and articles unalterable in their nature and varied in colour, which said compounds in a state of solution may also be advantageously employed as paints or varnish.
ROLLINSON, JOHN - - -	2751	8th Nov. 1860	Working the breaks of winding-engines.
ROLLINSON, WILLIAM - - -	2751	8th Nov. 1860	Working the breaks of winding-engines.
ROLLO, DAVID - - -	2553	19th Oct. 1860	Improvements in the construction of surface condensers and feed water heaters and in the combination of certain parts of steam-engines specially adapted for marine purposes.
ROMAINE, ROBERT - - -	1424	9th June 1860	Construction of steam-boilers and condensers.
ROMAINE, ROBERT - - -	2003	18th Aug. 1860	Improved machinery applicable to steam cultivation.
ROME, LOUIS - - -	1843	30th July 1860	A machine for the fabrication of fishing or other nets.
ROME, PHILIPPE - - -	3188	29th Dec. 1860	Manufacturing fibrous materials, tissues, or other fabrics.
ROMEU, FRANÇOIS - - -	369	11th Feb. 1860	Improved hair pins.
ROMIGUIÈRE, JULES - - -	1910	8th Aug. 1860	An improved plant protector. (Patented by Charles Stevens.)
ROMINGER, THOMAS - - -	2288	20th Sept. 1860	An improved apparatus for lubricating the frictional surfaces of machinery. (Patented by Robert Kunstmann.)
RONALD, JAMES - - -	412	15th Feb. 1860	Machinery for "topping up," "forming" or "laying twine," lines, cables, and other cordage.
RONALD, JAMES - - -	777	26th March 1860	Machinery for the spinning of hemp, flax, manilla, or other like fibrous material.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
RONALD, JAMES - - -	2952	1st Dec. 1860	Machinery for the spinning of hemp, flax, manilla, or wool or other like fibrous material.
ROSE, WILLIAM - - -	1808	25th July 1860	Breech loading fire-arms and ordnance.
ROSINSKY, NICOLAS - - -	2217	13th Sept. 1860	A new kind of oil for cosmetics, soaps, and other like articles for the toilet.
ROSS, FREDERICK - - -	102	14th Jan. 1860	Ornamenting textile fabrics known as American cloth.
ROSS, WILLIAM - - -	2117	1st Sept. 1860	Taps or valves.
ROSSER, HENRY SHEPHERD -	1067	27th April 1860	An improved sole to be worn in boots and shoes.
ROUGNON, — - -	1409	8th June 1860	An improved apparatus for washing and separating metals or their ores from impurities or other foreign matters which are mixed with them. (Patented by James Wright.)
ROUQUAYROL, BENOIT - -	2228	14th Sept. 1860	An improved apparatus for supplying air to persons in water and in mines or other places. (Patented by Paul Pautard.)
ROUSSEAU, LOUIS HENRI -	2480	11th Oct. 1860	Steam-engines.
ROUSTAIN, — - -	1724	17th July 1860	An improved method of preserving potatoes cut in pieces by a machine for that purpose. (Patented by Charles Stevens.)
ROUTLEDGE, THOMAS - -	274	2nd Feb. 1860	Manufacture of paper.
ROUTLEDGE, WILLIAM -	1543	25th June 1860	Self acting feed apparatus for steam-boilers.
ROWAN, JOHN MARTIN -	332	8th Feb. 1860	Steam-engines and boilers.
ROWBOTHAM, SAMUEL -	7	2nd Jan. 1860	A composition for rendering unflammable linen, cotton, silk or other inflammable fabrics and substances.
ROWBOTHAM, SAMUEL -	408	14th Feb. 1860	A composite soap.
ROWBOTHAM, SAMUEL -	1339	31st May 1860	Composition and manufacture of soap.
ROWBOTTOM, CORDINGLEY -	2561	20th Oct. 1860	Apparatus for grinding or sharpening the cards used in carding fibrous materials.
ROWCLIFFE, JOHN BARNOUIN	532	27th Feb. 1860	Pin winding machinery.
ROWE, JAMES - - -	747	22nd March 1860	Sewing-machines. (Patented by David Millard.)
ROWELL, WARREN - - -	43	6th Jan. 1860	Locks for doors and other purposes. (Patented by John Fowler.)
ROWLEY, JOHN JEPHSON -	2315	22nd Sept. 1860	Machinery for cutting or clipping hedges.
RUCHET, DAVID FRANÇOIS [LOUIS.]	119	17th Jan. 1860	An improved rotatory machine to be used as a water-wheel, steam-engine, or pump, and for transmitting at any distance motive-power.
RUDDER, PIERRE JEAN DE -	1663	10th July 1860	Ornamenting glass surfaces. (Patented by François Boez.)
RÜDIGER, THEODORE - -	1402	7th June 1860	Machinery or apparatus for roving, spinning, and doubling cotton, wool, flax, and other fibrous materials. (Patented by Edward Joseph Hughes.)
RUMBLE, ROBERT ALEXANDER	1792	24th July 1860	Improved apparatus for feeding fuel to fire-places or furnaces.
RUMBOLD, WILLIAM - -	2245	15th Sept. 1860	An improved mode of constructing domes.
RUNKEL, MARK - - -	75	11th Jan. 1860	Improved apparatus for transmitting signals. (Patented by William Edward Newton.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
RUOLZ, HENRI CATHERINE [CAMILLE DE.]	2185	7th Sept. 1860	Manufacture of cast steel and the remanufacture of old steel. (Patented by Charles Couper.)
RUSH, HENRY CHATTERTON -	2382	2nd Oct. 1860	Fences for railway platforms.
RUSSELL, CHARLES GOURLEY -	2570	22nd Oct. 1860	An improved method of and apparatus for facilitating the operation of certain kinds of printing from engraved plates, cylinders, lithographic stones, letter-press blocks and other like surfaces.
RUSSELL, JOHN JAMES -	2499	13th Oct. 1860	Apparatus used for supplying steam from steam-boilers or generators.
RUSSELL, JOHN SCOTT -	3184	28th Dec. 1860	Constructing and arming ships and vessels and also floating and land batteries.
RUTHERFORD, JOSEPH CHASE	735	21st March 1860	An improved preparation or solution for toning photographic pictures. (Patented by William Edward Newton.)
RUTTER, GEORGE - -	2372	2nd Oct. 1860	Improvements in machinery and apparatus for and in treating flax, hemp, reeds, china grass, New Zealand flax, plantain, and all other vegetable and animal fibres.
RUZÉ, JEAN VICTOR ALFRED -	708	17th March 1860	Machinery for dressing warp threads. (Patented by Richard Archibald Brooman.)
RYDE, JOHN - - -	1864	2nd Aug. 1860	An improvement in apparatus applicable to turn tables, swing bridges, cranes, and other machinery acting on a pivot. (Communicated by Mr. Frédéric Paul.)
RYDER, GEORGE - -	194	25th Jan. 1860	A high pressure stop valve or cock.
RYDER, HENRY - -	77	11th Jan. 1860	Improved apparatus for moulding candles. (Patented by William Edward Newton.)

## S.

SABATIER, PIERRE - -	2649	29th Oct. 1860	An improved method of manufacturing railway wheel tyres and other articles of steel. (Patented by Michael Henry.)
SACCARDO, LUIGI - -	2784	13th Nov. 1860	An improved apparatus and arrangement of paper for the substitution of this latter instead of the cards of jacquard looms.
SAGAR, JUBAL - -	1277	23rd May 1860	Washing, wringing mangling, squeezing and crushing machines.
SAGE, FREDERICK - -	3167	27th Dec. 1860	Brackets for carrying trays, shelves, glass cases, &c. in windows and glass cases.
ST. ANGE, EUGENE ETIENNE [BARBIER.]	1053	26th April 1860	Portable bedsteads; mattresses to be used therewith. (Patented by John Henry Johnson.)
ST. CYR, JEAN LAFON -	3188	29th Dec. 1860	Manufacturing fibrous materials, tissues, or other fabrics.
ST. JUST, LOUIS ARMAND LE [BLANC DE.]	29	5th Jan. 1860	An improved machine for cutting soft and hard stones in open quarries.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
SALE, JOHN - - -	1572	29th June 1860	Construction of ovens and of chambers in ovens for firing bricks, tiles, pipes, quarries, and other articles of the like nature.
SALISBURY, EDWARD - -	2732	6th Nov. 1860	An improved mixture or solution to be applied to pickers, picking-bands, straps, sole leather, and such like materials, in order to harden them and to render them more lasting.
SALISBURY, ROBERT - -	503	24th Feb. 1860	An improved method of adapting sheds and other buildings to the purpose of drying pipes, tiles, bricks, and other articles made from clay or other plastic materials.
SALISBURY, SILAS C. - -	758	23rd March 1860	Looms for weaving. (Patented by William Edward Newton.)
SALISBURY, SILAS C. - -	1179	12th May 1860	An improved construction of metallic fencing (Communicated by M. A. Myers.)
SALISBURY, SILAS C. - -	1197	15th May 1860	An improved mode of and apparatus for churning butter. (Communicated by George W. Mears.)
SALISBURY, SILAS C. - -	1219	17th May 1860	Machinery and apparatus to be employed in weaving.
SALISBURY, SILAS COVELL -	2107	31st Aug. 1860	Sewing-machines.
SALMON, JOHN AITKEN - -	1594	2nd July 1860	Improvements in apparatus for feeding boilers and in furnaces.
SALMON, PETER - - -	1430	11th June 1860	Improvements in furnaces and in feeding steam-boilers.
SAMPLE, GEORGE - - -	32	5th Jan. 1860	Boots, shoes, clogs, and such like coverings for the feet.
SAMPSON, EDWARD BARNARD	818	29th March 1860	Condensing apparatus of carding engines.
SAMPSON, GEORGE R. - -	1150	9th May 1860	Manufacture of threads and yarns; preparation of materials for such manufacture. (Patented by William Edward Newton.)
SAMSON, GEORGE ALFRED -	2867	1st Nov. 1860	Manufacture of boots and shoes.
SAMSON, WILLIAM HENRY -	1079	28th April 1860	A machine or apparatus for the cultivation of the soil.
SAMUEL, JAMES - - -	1992	15th Aug. 1860	Rails for streets and roads; wheels and axles to be used thereon.
SAMUELS, SAMUEL RODGERS -	1248	21st May 1860	Machinery used in weaving.
SAMUELSON, ALEXANDER -	1325	29th May 1860	Gun-boats.
SAMUELSON, BERNHARD -	1191	15th May 1860	Reaping and mowing machines.
SAMUELSON, BERNHARD -	2429	8th Oct. 1860	Harvesting machines.
SANDERS, JOHN - - -	450	18th Feb. 1860	Watches.
SANDERS, Professor - - -	760	23rd March 1860	Manufacture of illuminating gas. (Patented by William Stump Lewis.)
SANDYS, GEORGE - - -	3148	22nd Dec. 1860	A novel instrument or apparatus for conveying signals or communicating intelligence between railway stations and other distant points.
SARAZIN, AUGUSTE - - -	2439	8th Oct. 1860	Cleaning or separating gutta-percha from extraneous matters; apparatus for the same. (Patented by William Clark.)
SARAZIN, AUGUSTE - - -	2440	8th Oct. 1860	Driving straps and belts. (Patented by William Clark.)



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
SARJEANT, ARTHUR - -	2424	6th Oct. 1860	Malt liquors.
SARTON, — - -	2	2nd Jan. 1860	An improved safety lock. (Patented by José Luis.)
SAUNDERS, JOHN - - -	1393	6th June 1860	Manufacture of tin and terne plates.
SAUTTER, LOUIS - - -	469	21st Feb. 1860	Treatment of mica and its application to the manufacture of reflectors and to other uses.
SAUTTER, MAURICE - -	2280	19th Sept. 1860	Generating and applying steam as a motive-power; apparatus employed for these purposes. (Communicated by Mr. Joseph Gill.)
SAVAGE, ALFRED - - -	3151	22nd Dec. 1860	Improved apparatus for separating, reducing in size and mixing articles of grocery.
SAVAGE, EDWARD - - -	942	14th April 1860	Rotating breech fire-arms. (Patented by Alfred Vincent Newton.)
SAVAGE, JOHN - - -	1620	4th July 1860	An improved means of or apparatus for threading needles.
SAVAGE, ROBERT WATSON -	225	28th Jan. 1860	Improvements in tidal ladders and in steps for embarking and landing purposes.
SAVAGE, SIMEON - - -	1196	15th May 1860	Improvements in valves and valve gear for the induction and eduction of steam to and from the cylinders of steam-engines, part of which is applicable to other purposes. (Patented by William Edward Newton.)
SAWYER, JOSEPH - - -	642	9th March 1860	Construction of furnaces for steam-boilers and other purposes.
SAX, ALPHONSE - - -	1190	15th May 1860	A new mode of obtaining motive-power by the effect of weights and springs, or by springs only in combination with proper connecting parts.
SAXBY, JOHN - - -	1754	19th July 1860	Improvements in apparatus for and in the mode or method of working and governing railway points and signals.
SAYER, ROBERT BURGESS -	696	16th March 1860	Improvements in parts of the permanent way of railways.
SCARBOROUGH, JOHN VIC- [KERS.	1072	27th April 1860	Manufacture of boots, shoes, and clogs.
SCHWEITHAUER, FERDINAND -	2219	14th Sept. 1860	An improved machine for printing calico and other fabrics.
SCHENKL, JOHN P. - - -	2021	22nd Aug. 1860	An invention relating to ordnance as well as fire-arms. (Patented by Edward Augustus Dana.)
SCHUTZ, EDWARD - - -	2656	30th Oct. 1860	Rotatory engines. (Patented by John Henry Johnson.)
SCHIELE, CHRISTIAN - - -	475	22nd Feb. 1860	Machinery for hammering, crushing, reducing, cutting, and mixing.
SCHIELE, CHRISTIAN - - -	594	3rd March 1860	Obtaining and applying motive-power from ocean or other waves.
SCHIELE, CHRISTIAN - - -	1317	29th May 1860	Manufacture of lubricants. (Communicated by Ferdinand Wendelin Kleist.)
SCHLOSS, JOSEPH - - -	857	3rd April 1860	An improved plug for smoking pipes.
SCHLOSS, MAX - - -	372	11th Feb. 1860	Construction of water closets. (Patented by James Wright.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
SCHMIDT, CHRISTOPHE FRÉ- [DÉRIC.	187	25th Jan. 1860	Preparing wire-gauze to render it applicable to various purposes.
SCHNEIDER, CHARLES AU- [GUSTUS.	2150	6th Sept. 1860	Improvements in manufacturing letters, numerals, arms, designs, trademarks, mosaic and other ornaments to be attached to glass or other smooth surface.
SCHNELL, WILLIAM - -	2238	15th Sept. 1860	Manufacture of lucifer matches.
SCHOFIELD, JOHN - -	2798	15th Nov. 1860	Machinery or apparatus for doubling yarns of cotton or other fibrous materials.
SCHOFIELD, MILES - -	2798	15th Nov. 1860	Machinery or apparatus for doubling yarns of cotton or other fibrous materials.
SCHOFIELD, ROBERT - -	2099	30th Aug. 1860	Floating-structures. (Patented by William Edward Newton.)
SCHOFIELD, THOMAS - -	2099	30th Aug. 1860	Floating-structures. (Patented by William Edward Newton.)
SCHOLES, WILLIAM - -	3108	18th Dec. 1860	Wire card-covering for carding wool, silk, flax, tow, cotton, jute or other fibrous substances.
SCHÖN, CARL - - -	1818	27th July 1860	Improvements in the construction of propelling wheels for ships.
SCHUBART, ——— - -	974	18th April 1860	Improvements in tilling land and in actuating agricultural implements by steam power, and in apparatus employed therein. (Patented by John Fowler, junior, William Worby, and David Greig.)
SCHUBERTH, JOHANN -	134	18th Jan. 1860	Improvements in nails and similar articles, and in preparing materials for the production thereof and of buttons and various other articles to which the same may be applicable.
SCHUCHARD, GUILLAUME AU- [GUSTE.	2804	22nd Nov. 1860	Apparatus for communicating continuous rotary motion from manual power. (Patented by Richard Archibald Brooman.)
SCHUHMAN, SIGISMUND -	1384	6th June 1860	Machinery or apparatus for spinning, doubling, and winding fibrous materials.
SCHUHMAN, SIGISMUND -	2137	5th Sept. 1860	Looms; means of driving the same.
SCHULTZ, CHARLES AUGUSTE-	16	3rd Jan. 1860	Improvements in the cut off motion and slide valves of steam-engines. (Patented by Alfred Vincent Newton.)
SCHWAB, FREDERICK - -	560	29th Feb. 1860	Breech loading fire-arms.
SCHWANN, FREDERICK - -	1901	6th Aug. 1860	Dressing and stiffening fabrics and yarns.
SCHWANN, FREDERICK - -	3130	20th Dec. 1860	Dressing and stiffening fabrics and yarns; preparing the cementing and stiffening materials used.
SCHWEITZER, JULIUS - -	1137	8th May 1860	Manufacture of artificial mineral chalybeate water.
SCHWENK, FERDINAND -	507	24th Feb. 1860	Improvements in the reduction of friction in the working parts of machinery, applicable also to the transmission of motive-power. (Patented by John Henry Johnson.)
SCOTT, ALEXANDER - -	312	27th Jan. 1860	Reburning animal charcoal; application of the products arising therefrom; apparatus employed therein.
SCOTT, EBENEZER ERSKINE -	520	25th Feb. 1860	Improvements in and pertaining to breech loading guns and fire-arms.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
SCOTT, FRANCIS - -	2435	8th Oct. 1860	Springs for railroad cars, locomotives, and carriages. (Patented by William Edward Newton.)
SCOTT, GEORGE - -	1141	9th May 1860	Furnace or grate bars.
SCOTT, JOHN - - -	2466	10th Oct. 1860	An improvement in the manufacture of anchors, and an improved apparatus to be employed therein.
SCOTT, JOHN - - -	3049	12th Dec. 1860	Reefing and furling sails.
SCOTT, JOHN WILLIAM -	154	21st Jan. 1860	Improvements in plates for attaching buttons to garments and other articles, in button shanks and in buttons.
SCOTT, JOSHUA - - -	92	13th Jan. 1860	Gas meters.
SEAGER, ROBERT - - -	1041	25th April 1860	Manufacture of boots and shoes.
SEAR, WILLIAM - - -	2533	17th Oct. 1860	Cartridges.
SEARLE, FRANCIS WILLIAM -	1844	30th July 1860	An improved apparatus for giving information at doors and places of business.
SEARLE, THOMAS A. - -	683	14th March 1860	An improved construction of nail plate feeder. (Patented by Alfred Vincent Newton.)
SEBILLE, CHARLES FELIX -	988	20th April 1860	A non-metallic composition to be used in the manufacture of water, gas, and other pipes or conduits, and machinery or apparatus to be used in such manufacture.
SEDLEY, ANGELO JAMES -	2742	7th Nov. 1860	Chairs, sofas, and other articles of furniture used to sit or recline upon.
SEED, BENJAMIN - - -	2712	5th Nov. 1860	Improvements in apparatus used in the treatment of soap suds or other saponaceous or oily matters, which apparatus is also applicable in the treatment of other matters.
SEEGER, J. - - - -	354	9th Feb. 1860	An improved machine for moulding candles. (Patented by George White.)
SEELY, ORAN WILLIAM -	3019	8th Dec. 1860	Improved machinery for making bricks. (Patented by William Edward Newton.)
SEGUINEAU, ALEXIS - -	3099	17th Dec. 1860	Improvements applicable to fishing-nets. (Patented by Michael Henry.)
SEILER, FREDERIC - - -	119	17th Jan. 1860	An improved rotatory machine to be used as a water-wheel, steam-engine, or pump, and for transmitting at any distance motive-power.
SEILER, FREDERIC - - -	2244	15th Sept. 1860	Compressing air or other gas which may be transferred by tubes, for raising water and for various other purposes.
SEILER, FREDERIC - - -	2905	26th Nov. 1860	An improved apparatus applicable to ships, boats, and other navigable vessels, for preventing the dangers of shipwreck at sea or in rivers, and for diminishing their draught of water.
SEITZ, ADOLPH - - - -	1898	6th Aug. 1860	An improved manufacture of artificial sulphate of baryta. (Patented by Adolph Julius Seitz.)
SEITZ, ADOLPH JULIUS -	1898	6th Aug. 1860	An improved manufacture of artificial sulphate of baryta. (Communicated by Adolph Seitz.)
SELDEN, L. K. - - - -	214	27th Jan. 1860	An improved folding frame designed for umbrellas, parasols, tents, awnings, sun blinds, and other analogous structures. (Patented by William Edward Newton.)



[Sen]

## AND APPLICANTS FOR PATENTS OF INVENTION.

[She

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
SENIOR, CHARLES - - -	1373	5th June 1860	Apparatus for utilising the waste heat in the flues of steam and other engines.
SENIOR, WILLIAM - - -	1177	12th May 1860	Purifying gas and thereby obtaining a useful product.
SEYDE, FRANCIS CHARLES - -	1728	17th July 1860	Improved mechanism for pulping, triturating, and comminuting for culinary and other purposes.
SHACKLETON, JAMES - - -	361	10th Feb. 1860	Spinning of wool, cotton, flax, alpaca, mohair, and other fibrous substances.
SHALER, REUBEN - - -	2301	21st Sept. 1860	An improved floor skate. (Patented by Calvin B. Rogers.)
SHAND, ALEXANDER - - -	726	20th March 1860	Preparing or bleaching coir fibre and coir yarns. (Communicated by Charles Shand.)
SHAND, CHARLES - - -	726	20th March 1860	Preparing or bleaching coir fibre and coir yarns. (Patented by Alexander Shand.)
SHARP, FREDERICK EDWARD -	2790	14th Nov. 1860	An improved portable rifle battery. (Communicated by Thomas Martin.)
SHARP, ISAAC - - -	2904	26th Nov. 1860	Apparatuses for the manufacture and for the drying of bricks, tiles, and other like ware.
SHARP, JOHN - - -	1284	24th May 1860	Looms for weaving.
SHARPE, WILLIAM - - -	2610	26th Oct. 1860	Latches and locks.
SHAVER, ARCHIBALD G. -	1147	9th May 1860	An eraser and pencil sharpener.
SHAW, BENJAMIN - - -	259	1st Feb. 1860	Improvements in stench traps, and in the cesspools or pits of sewers.
SHAW, HENRY - - -	1682	12th July 1860	Means or apparatus for stopping railway trains.
SHAW, ISAAC BROAD - - -	1747	19th July 1860	Ornamentation or decoration of earthenware, porcelain, glass, and other articles, and in producing the designs, figures, patterns, and roller moulds used in such process, such roller moulds being also applicable for the casting of rollers used in typographic and lithographic printing.
SHAW, JAMES EDMUND - -	1747	19th July 1860	Ornamentation or decoration of earthenware, porcelain, glass, and other articles, and in producing the designs, figures, patterns, and roller moulds used in such process, such roller moulds being also applicable for the casting of rollers used in typographic and lithographic printing.
SHAW, JOHN - - -	146	20th Jan. 1860	Construction of ventilators for hot houses, conservatories, and other such buildings.
SHAW, JOHN - - -	971	18th April 1860	Looms.
SHAW, JOHN - - -	1551	26th June 1860	Improvements in the articles technically known as "flyes" or "flyers" used in the process of spinning and preparing woollen, worsted, cotton, and other fibrous materials.
SHAW, PHILANDER - - -	688	13th March 1860	An improved method, means, and process of treating wood so that it becomes so changed as to be well adapted for uses for which it is naturally unfit. (Patented by James Wright.)
SHAW, WILLIAM THOMAS -	1260	22nd May 1860	Thaumatropes or phenakistoscopes.
SHEARMAN, CHARLES HENRY	686	15th March 1860	Steam-engines.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
SHEARMAN, GEORGE - -	635	8th March 1860	Water gas meters.
SHEDDEN, THOMAS - -	373	11th Feb. 1860	Fire-arms.
SHEDDEN, THOMAS - -	389	13th Feb. 1860	Manufacture of cartridge cases for fire-arms, and the arrangement of primers therefor.
SHEDDEN, THOMAS - -	2954	1st Dec. 1860	Improvements in ammunition for fire-arms, and in packing the same for transport, and in the apparatus employed therein.
SHELDON, CATHERINE - -	640	9th March 1860	Certain improvements in ornamenting spurs and other metal portions of saddlery and harness furniture, and which said improvements are also applicable for ornamenting other fancy articles made of wrought or cast metal.
SHEPHERD, JOSIAH - -	630	8th March 1860	Certain improvements in the method of and apparatus for supplying and heating air, the same to be used as a motive-power for marine, locomotive, and stationary engines.
SHEPPARD, AUGUSTUS FRED- [ERICK.	2352	28th Sept. 1860	An improved method of and apparatus for plate printing. (Communicated by E. Muggeridge.)
SHERIDAN, JOHN - - -	831	31st March 1860	Manufacture of sheet metal casks and other vessels.
SHIELDS, ALEXANDER - -	689	15th March 1860	Jacquard looms or machinery for weaving.
SHIELDS, JOHN - - -	689	15th March 1860	Jacquard looms or machinery for weaving.
SHILLIBEER, GEORGE - -	2697	3rd Nov. 1860	Construction of omnibuses or other vehicles.
SHIPLEY, JOHN - - -	1618	4th July 1860	Knitting machinery.
SHIRTCLIFF, WILLIAM RICH- [MOND.	2897	26th Nov. 1860	Warm baths.
SHORE, SYDNEY FOYE - -	538	27th Feb. 1860	An improvement in or addition to casks to prevent their becoming foul.
SHUTTLEWOOD, JOSEPH - -	1618	4th July 1860	Knitting-machinery.
SHUTTLEWORTH, JOSEPH - -	1227	17th May 1860	Portable and traction engines.
SHWEET, JAMES H. - - -	90	12th Jan. 1860	Machinery to be used in manufacturing spikes, bolts, rivets, screw-blanks, and other similar articles. (Patented by Alfred Charles Twentymen.)
SIBLEY, THOMAS - - -	1070	27th April 1860	Looms for weaving.
SIDEBOTTOM, JOHN - - -	597	5th March 1860	Looms for weaving.
SIDEBOTTOM, JOHN - - -	1074	28th April 1860	Looms for weaving.
SIDEBOTTOM, JOHN - - -	2917	28th Nov. 1860	Improvements in reeds and in apparatus for forming the lease or shed in machines for sizing, dressing, warping, and weaving.
SIEBE, AUGUSTUS HENRY -	2749	8th Nov. 1860	Instruments for determining the movement of musical compositions and which are also applicable for other purposes.
SIEMENS, CHARLES WILLIAM	519	25th Feb. 1860	Construction of electric telegraphic cables and conductors; machinery connected therewith.
SIEMENS, CHARLES WILLIAM	2074	28th Aug. 1860	Engines to be worked by the alternate expansion and contraction of steam and other elastic fluids.
SIEMENS, CHARLES WILLIAM	2982	5th Dec. 1860	Fluid meters.
SIEVIER, ROBERT WILLIAM -	2257	17th Sept. 1860	Smelting of iron and other ores. (Patented by George Frederick Smith.)
SILAS, FERDINAND - - -	3103	18th Dec. 1860	An aërostatic signal apparatus: "soma-sphere."



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
SILVER, HUGH ADAMS - -	994	20th April 1860	Improvements in moulding india-rubber and other like gums in cells for galvanic batteries, and in insulators for telegraph wires.
SILVER, THOMAS - - -	418	15th Feb. 1860	Marine steam-engines.
SILVER, THOMAS - - -	527	25th Feb. 1860	Apparatus for governing or regulating the speed of steam and other engines and machines in motion.
SILVER, THOMAS - - -	1109	2nd May 1860	Machinery for and method of driving or communicating motion to a ships' propeller.
SILVESTER, JOHN - - -	2475	11th Oct. 1860	A new or improved steam pressure and vacuum gauge.
SIM, JAMES - - - -	677	14th March 1860	Measuring and registering the flow or discharge of liquids.
SIM, JAMES - - - -	678	14th March 1860	Meters or apparatus for measuring fluids.
SIMBOISELLE, V. CLOVIS -	2448	9th Oct. 1860	Atmospheric railways. (Patented by Charles Stevens.)
SIMON, J. L. - - - -	1214	17th May 1860	An improved carriage break or drag. (Patented by Marc Antoine François Mennons.)
SIMON, LOUIS - - - -	3016	8th Dec. 1860	Heated air engines.
SIMON, MAXIMILIAN - - -	2283	19th Sept. 1860	Sewing-machines.
SIMONS, FRANCIS CONSTABLE	1498	20th June 1860	Ordnance.
SIMONS, WILLIAM - - -	3	2nd Jan. 1860	Construction of ships or other floating vessels.
SIMPKIN, EDMUND - - -	849	3rd April 1860	Couplings for carriages, waggons, and other vehicles on railways.
SIMPSON, CORTLAND HERBERT	1202	16th May 1860	Propelling vessels through the water, apparatus connected therewith.
SIMPSON, GEORGE - - -	1518	22nd June 1860	Wine decanters and waggon or travelling decanter stand.
SIMPSON, GEORGE - - -	2754	8th Nov. 1860	Pumps.
SIMPSON, THOMAS - - -	2977	4th Dec. 1860	Construction of crates and other packing cases.
SIMS, REUBEN - - - -	1736	18th July 1860	Bone mills and logwood rasps.
SINGER, ISAAC MERRIT - -	2509	15th Oct. 1860	Construction and fitting of steam vessels.
SINNOCK, WILLIAM - - -	84	12th Jan. 1860	Arrangements of apparatus for the manufacture of hempen or other fibrous covered insulated wires for submarine telegraph cables.
SINNOCK, WILLIAM - - -	85	12th Jan. 1860	An improved apparatus for paying out submarine telegraph cables.
SINNOCK, WILLIAM - - -	1164	11th May 1860	Improvements in the manufacture of wire rope, and in machinery for that purpose, with special application to the manufacture of telegraph cables.
SINSHEIMER, ADOLPHUSS -	3019	8th Dec. 1860	Improved machinery for making bricks. (Patented by William Edward Newton.)
SKEKEL, ALEXANDER - - -	1374	5th June 1860	Apparatus for regulating the draft in the tubes of multitubular boilers. (Patented by George Fletcher.)
SKEKEL, ALEXANDER - - -	1735	18th July 1860	Improvements in pistons for steam-engine and other cylinders, which improvements are also applicable to the buckets of pumps. (Patented by Donald Skekel.)
SKEKEL, DONALD - - - -	1374	5th June 1860	Apparatus for regulating the draft in the tubes of multitubular boilers. (Patented by George Fletcher.)



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
SKERKE, DONALD - - -	1735	18th July 1860	Improvements in pistons for steam-engine and other cylinders, which improvements are also applicable to the buckets of pumps. (Partly communicated by Alexander Skekel.)
SKERTCHLY, JOSEPH - -	311	6th Feb. 1860	Apparatus for evaporating the moisture from slip for potters' use.
SKINNER, HENRY EDWARD -	2308	21st Sept. 1860	Cranes and other lifting apparatus.
SKINNER, WILLIAM - -	1613	4th July 1860	A new and improved machine for stretching and glossing silk. (Communicated by Lucius Dimock.)
SKIPTON, SAMUEL STACY -	1880	3rd Aug. 1860	An improved splint for gunshot and other compound fractures of the limbs.
SLATTER, WILLIAM - -	1177	12th May 1860	Purifying gas and thereby obtaining a useful product.
SLEIGH, WILLIAM WILCOCKS	1491	20th June 1860	Neutralific motive-power engine.
SMEDLEY, THOMAS - -	2626	27th Oct. 1860	Manufacture of metal rollers and cylinders used for calico printing and other purposes.
SMETHURST, JOSEPH - -	2912	27th Nov. 1860	Improvements in slide valves of steam-engines, and for other purposes where slide valves are employed.
SMITH, ALBERT M. - -	1482	19th June 1860	Manufacture of a portable pocket match safe. (Patented by Augustus Bryant Childs.)
SMITH, ALFRED - - -	1714	16th July 1860	Manufacture of velvet and other similar piled fabrics.
SMITH, ARTHUR - - -	1671	11th July 1860	Improvement in the material for sizing and dressing yarns preparatory to weaving.
SMITH, CHARLES - - -	1586	30th June 1860	Purifying certain gases and liquids from sulphuretted hydrogen.
SMITH, ELLISON - - -	1123	5th May 1860	Machinery for preparing wool, cotton, flax, and other fibrous materials.
SMITH, ELLISON - - -	1924	8th Aug. 1860	Machinery for preparing wool, cotton, flax, and other fibrous materials for spinning.
SMITH, GEORGE - - -	246	31st Jan. 1860	Improvements in monuments, fountains, lamps, letter boxes, urinals, and such like ornamental and public erections in cast iron.
SMITH, GEORGE FREDERICK -	2257	17th Sept. 1860	Smelting of iron and other ores. (Communicated by Robert William Sievier.)
SMITH, HUGH - - -	918	12th April 1860	Machinery for cutting wood.
SMITH, JAMES - - -	2563	20th Oct. 1860	Manufacture of leggings or knickerbockers.
SMITH, JASPER - - -	2477	11th Oct. 1860	Manufacture of chenille; machinery for that purpose.
SMITH, JOHN - - -	308	4th Feb. 1860	Manufacture of handles or knobs for sticks, umbrellas, and parasols, for swords, knives, forks, and other articles of cutlery, for pistol butts and small arms' stocks, and for other similar articles.
SMITH, JOHN - - -	309	4th Feb. 1860	Manufacture of furniture for doors and drawers, bell levers, curtain band, cornice pole, and lamp and chandelier enrichments, and the ornamental parts of other similar articles.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
SMITH, JOHN - - -	875	5th April 1860	Manufacture of buttons and other dress fastenings.
SMITH, JOHN - - -	1503	21st June 1860	Improvements in the manufacture of composition jewellery and ornaments, and in cases for jewellery, photographs, and for other similar purposes.
SMITH, JOHN - - -	2568	22nd Oct. 1860	Machinery for preparing and spinning cotton and other fibrous materials.
SMITH, JOHN JOBSON - -	353	9th Feb. 1860	Fenders and fire guards.
SMITH, MARK - - -	1713	16th July 1860	Machinery for communicating motion to and for stopping looms for weaving.
SMITH, NATHANIEL - -	815	29th March 1860	Construction of hay making machines.
SMITH, PETER RECTOR - -	2514	15th Oct. 1860	Fire-arms and ordnance; projectiles to be used therewith.
SMITH, PRINCE - - -	128	18th Jan. 1860	An improved process of hardening cast iron caps used in machinery for spinning and doubling wool, cotton, silk, flax, mohair, and other fibrous substances.
SMITH, RICHARD - - -	599	5th March 1860	Preparation and production of colouring matter.
SMITH, RICHARD - - -	1945	11th Aug. 1860	Manufacture of colouring matters for dyeing and printing fabrics.
SMITH, RICHARD - - -	1990	17th Aug. 1860	Preparation and production of colouring matter.
SMITH, RIGBY DAVIES - -	2563	20th Oct. 1860	Manufacture of leggings or knickerbockers.
SMITH, ROBERT - - -	815	29th March 1860	Construction of hay making machines.
SMITH, ROBERT - - -	2024	23rd Aug. 1860	An improved portable circular crane applicable also as a fire-escape.
SMITH, ROBERT - - -	2303	21st Sept. 1860	Covering of iron, wooden ships, yachts, steam boats, and barges bottoms and outside.
SMITH, ROBERT THURSFIELD -	1809	25th July 1860	Improved apparatus for smutting and screening grain and distributing other granular substances.
SMITH, SAMUEL - - -	2114	1st Sept. 1860	Looms for weaving.
SMITH, SPENCER - - -	667	13th March 1860	Manufacture of chains and other similar articles.
SMITH, STEPHEN RANDOLL -	805	28th March 1860	Improvements in vessels and apparatus used for raising sunken vessels and other bodies in the water, and for lowering materials for structural purposes in the water.
SMITH, THOMAS - - -	249	31st Jan. 1860	Manufacture of chenille; apparatus employed therein.
SMITH, THOMAS - - -	645	9th March 1860	Machinery or apparatus for ornamenting woven fabrics.
SMITH, THOMAS - - -	1616	4th July 1860	Apparatus or machinery and gearing for working, stopping and holding chains in ships or vessels, and for moving or retaining heavy weights.
SMITH, THOMAS - - -	2893	26th Nov. 1860	Looms for weaving woollens.
SMITH, THOMAS JONES - -	106	14th Jan. 1860	An improved machine for printing in more than one colour at a time.
SMITH, THOMAS WONTNER -	2729	6th Nov. 1860	An improved process for obtaining pigments.
SMITH, WILLIAM - - -	128	18th Jan. 1860	An improved process of hardening cast iron caps used in machinery for spinning and doubling wool, cotton, silk, flax, mohair, and other fibrous substances.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
SMITH, WILLIAM - - -	952	16th April 1860	Paving or covering roads and other ways.
SMITH, WILLIAM HENRY -	2713	6th Nov. 1860	Fire-arms. (Patented by Montague Richard Levenson.)
SMITH, WILLIAM WILNER [HENRY.	1362	2nd June 1860	Mode of and apparatus for preparing leather for harness and boot and shoe manufacturers.
SMITH, WILLOUGHBY - -	107	14th Jan. 1860	Improvements in transferring designs and in ornamenting glass and other surfaces, also in the manufacture of slides for magic lanterns.
SMITH, WILLOUGHBY - -	109	14th Jan. 1860	Treating gutta-percha, india-rubber, and compounds of those substances.
SMITH, WILLOUGHBY - -	1178	12th May 1860	Electric telegraph conductors.
SMITH, WILLOUGHBY - -	2056	25th Aug. 1860	Manufacture of telegraphic cables.
SMITH, WILLOUGHBY - -	3138	21st Dec. 1860	Manufacture of electric telegraph cables.
SMITHARD, SAMUEL - -	1192	15th May 1860	Construction of machines for uniting portions of lace blond edging, nett and other fabrics, usually called running on machines.
SMYTH, JOHN ROBERT - -	1699	14th July 1860	Preservation of iron surfaces from corrosion or decay.
SMYTHIES, JOHN KINNERSLEY	561	29th Feb. 1860	A flying engine.
SNELL, WILLIAM - - -	2444	9th Oct. 1860	An improved machine for making horse shoe nails. (Communicated by Amos Whittemore.)
SNOW, GEORGE KNOWLES -	763	23rd March 1860	Improvements having reference to book binding and the folding and pasting of sheets of paper therefor.
SNOWDEN, WILLIAM FRANCIS	2109	31st Aug. 1860	Improved machinery for cutting chaff.
SNUGGS, EVERITT AUSTIN -	1642	7th July 1860	Manufacture of tea kettles and fountains, coffee pots, cans, saucepans, stew-pans, pails, and other articles of a similar character for domestic use, and baths, watering pots, and other articles of a similar description.
SNUGGS, JOHN - - -	1642	7th July 1860	Manufacture of tea kettles and fountains, coffee pots, cans, saucepans, stew-pans, pails, and other articles of a similar character for domestic use, and baths, watering pots, and other articles of a similar description.
Société Parisienne pour l'éclairage [au Gaz.	1207	16th May 1860	An improved mode of treating oils for the production of gas and volatile oils.
SOLBÉ, ALFRED - - -	1972	15th Aug. 1860	Improvements in the connections or joints of the posts and frames of bedsteads and iron houses.
SOMERVILLE, WALLACE COCH- [RANK.	2215	13th Sept. 1860	Apparatus for supplying locomotive tenders with water.
SOMMEILLER, GERMAIN -	890	9th April 1860	Pumps for compressing elastic fluids. (Patented by John Henry Johnson.)
SOMMELET, HUBERT - -	1432	11th June 1860	Manufacture of scissors.
SOOTHERAN, JOHN - -	2404	4th Oct. 1860	Reaping-machines.
SOULÉ, LOUIS JOSEPH - -	160	21st Jan. 1860	Washing ores and minerals. (Partly communicated by Henri Charles Landrin.)
SOULIÉ, ETIENNE - - -	1779	23rd July 1860	Construction of chimneys for lamps or apparatus for transmitting light. (Patented by George Henry Birkbeck.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
SOURDEVAL, ALFRED LALOUËL [De.]	1027	24th April 1860	Manufacture of ammonia. (Patented by William Clark.)
SOURDEVAL, ALFRED LALOUËL [De.]	1171	11th May 1860	Manufacture of cyanides of barium and strontium. (Patented by William Clark.)
SOURDEVAL, ALFRED LALOUËL [De.]	2023	22nd Aug. 1860	Preparation or manufacture of manure. (Patented by William Clark.)
SOUTHAM, EDWARD - -	3134	20th Dec. 1860	Machinery and apparatus for retarding and stopping railway trains.
SOUTHAM, FREDERICK - -	1477	18th June 1860	A new or improved rope porter to be used in steam ploughing or cultivating.
SOUTHBY, ANTHONY - -	2135	4th Sept. 1860	Manufacture of paper.
SOUTHORN, EDWIN - -	1081	28th April 1860	An improvement in or addition to tobacco pipes, and improvements in the manufacture and ornamentation of tobacco pipes.
SOUTTER, JAMES - - -	1576	29th June 1860	Improvements in steam-boilers, and an improved arrangement of steam-engine to be used therewith.
SOWERBY, JOHN - - -	462	20th Feb. 1860	Moulds for making pressed glass.
SPARKHALL, EDWARD - -	1456	14th June 1860	Producing certain designs and patterns upon cloth or textile fabrics in order to procure certain effects in garments made therefrom.
SPARKHALL, EDWARD - -	2621	27th Oct. 1860	Umbrellas and parasols.
SPEDDING, BENJAMIN JOSEPH	159	21st Jan. 1860	Improvements in apparatus for generating gas from oily and fatty substances, and in coolers and holders or gasometers.
SPEIGHT, GEORGE - - -	1664	10th July 1860	An improved means of protecting watches and other small portable articles from being stolen from the person.
SPENCE, HENRY - - -	902	11th April 1860	Manufacture of lacquer.
SPENCE, JOSEPH GEORGE -	902	11th April 1860	Manufacture of lacquer.
SPENCE, PETER - - -	2702	3rd Nov. 1860	Separating copper from its ores.
SPENCE, PETER - - -	3154	24th Dec. 1860	Separating copper from its ores.
SPENCE, WILLIAM - - -	724	21st March 1860	Sewing-machines. (Communicated by James Willcox.)
SPENCE, WILLIAM - - -	1448	13th June 1860	Mode of and apparatus for reducing silicious substances to a fluid state. (Communicated by George E. Vanderburgh.)
SPENCE, WILLIAM - - -	1850	30th July 1860	Manufacture of hats. (Communicated by Pierre Dujaric.)
SPENCE, WILLIAM - - -	2032	23rd Aug. 1860	Padlocks; keys for the same. (Communicated by Solomon Andrews and Thomas Morrell.)
SPENCE, WILLIAM - - -	2763	10th Nov. 1860	Breech-loading fire-arms. (Communicated by Edward Maynard.)
SPENCE, WILLIAM - - -	3114	19th Dec. 1860	Apparatus for closing doors and keeping them closed. (Communicated by Robert B. Donaldson.)
SPENCER, GEORGE - - -	1729	17th July 1860	Means or apparatus used for lubricating valves and pistons and other portions of locomotives and other engines worked by steam, air, gas, or vapour. (Communicated by Joseph Marks.)

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
SPENCER, JOHN FREDERICK -	120	17th Jan. 1860	Improvements in steam-engines for propelling ships and other vessels and for other purposes.
SPERRY, JOHN - - -	1130	7th May 1860	Rotary planes. (Patented by William Edward Newton.)
SPILLER, GEORGE - - -	636	8th March 1860	Knapsacks.
SPRATT, JAMES - - -	2169	7th Sept. 1860	Electrical conductors and their fittings.
SPRYE, COURTENAY - -	421	16th Feb. 1860	An improved self-feeding apparatus for printing-machines.
SPRYE, COURTENAY - -	884	9th April 1860	An improved disengaging hook.
SPURR, WILLIAM - - -	2893	26th Nov. 1860	Looms for weaving woollens.
SPURRIER, WILLIAM - -	304	4th Feb. 1860	Shaping metals; machinery employed for that purpose.
SQUIRE, WILLIAM STEVENS -	1625	5th July 1860	Production of colours for dyeing and printing.
STAFFORD, BENJAMIN - -	1024	24th April 1860	An improved method of applying heated air or steam for drying stoves, or boiling liquids, or for other purposes.
STAFFORD, JOHN - - -	1024	24th April 1860	An improved method of applying heated air or steam for drying-stoves or boiling liquids or for other purposes.
STAINTHORP, JOHN - - -	740	22nd March 1860	An improved method in coating or forming a hard shell on a candle at the time of moulding the same; apparatus connected therewith.
STANDLY, HENRY JOHN -	1599	3rd July 1860	Retorts, crucibles and other vessels employed for the purposes of fusion and distillation.
STANDLY, HENRY JOHN -	1617	4th July 1860	Production of gases for illumination and other purposes.
STANDLY, HENRY JOHN -	1629	5th July 1860	Production of gases for illumination and other purposes.
STANDLY, HENRY JOHN -	2132	4th Sept. 1860	Production of gas for illumination and other purposes, and the utilization of the products arising therefrom.
STANDLY, HENRY JOHN -	2600	25th Oct. 1860	Apparatus employed in the production of light.
Star Arms Company - - -	880	7th April 1860	Fire-arms. (Patented by William Clark.)
STARNES, JOHN SAMPSON -	841	2nd April 1860	Signal and other lamps.
STEAD, HORATIO - - -	2264	18th Sept. 1860	Finishing textile fabrics; means or apparatus employed therein.
STEANE, ELIZABETH - - -	2367	1st Oct. 1860	Improvements in apparatus by the use of which the dropping or guttering of candles is prevented.
STEANE, ELIZABETH - - -	2380	2nd Oct. 1860	An improved means or apparatus for preventing candles dropping or guttering.
STEARNS, HERMAN SWIFT -	1196	15th May 1860	Improvements in valves and valve gear for the induction and eduction of steam to and from the cylinders of steam-engines, part of which is applicable to other purposes. (Patented by William Edward Newton.)
STEART, JAMES - - -	3044	11th Dec. 1860	Treating skins for the manufacture of leather.
STEBBINS, LUCIUS - - -	3078	14th Dec. 1860	Improved pavement for streets. (Patented by William Edward Newton.)



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
STEELE, BENJAMIN HINMAN -	735	21st March 1860	An improved preparation or solution for toning photographic pictures. (Patented by William Edward Newton.)
STEIN, ANDREW - -	2549	18th Oct. 1860	Rail and tram ways.
STELL, WILLIAM - -	381	10th Feb. 1860	Spinning of wool, cotton, flax, alpaca, mohair, and other fibrous substances.
STELZL, ERNEST - -	832	31st March 1860	Ornamenting surfaces of glass, wood, plaster, and other materials; protecting them from the action of fire and moisture.
STENHOUSE, JOHN - -	1752	19th July 1860	Purifying coal gas.
STENSON, JOSEPH - -	112	16th Jan. 1860	Manufacture of iron.
STEPHENS, JOHN - -	1886	3rd Aug. 1860	Arrangement of wheeled carriages to facilitate their movement on soft or uneven land.
STEVEN, JAMES - -	1455	14th June 1860	Looms for weaving.
STEVENS, CHARLES - -	808	29th March 1860	Steel-yards and scales. (Communicated by P. Danion.)
STEVENS, CHARLES - -	959	17th April 1860	An improved steam mill. (Communicated by Hypolitte Durand.)
STEVENS, CHARLES - -	1120	5th May 1860	An improved means and apparatus for transporting and preserving live fish, and keeping water fresh for a long period. (Communicated by Jean Cyrille Noël.)
STEVENS, CHARLES - -	1174	12th May 1860	An improved machine for raising water. (Communicated by Jean Baptiste Guignes.)
STEVENS, CHARLES - -	1189	15th May 1860	An improved centrifugal turbine. (Communicated by Jacques Droctozée Bailly.)
STEVENS, CHARLES - -	1231	19th May 1860	Striking clocks. (Communicated by Curé Valla.)
STEVENS, CHARLES - -	1387	6th June 1860	A new material for packing and other purposes, together with the apparatus used in the manufacture thereof. (Communicated by Jean Pezienz Balthazar Masson and Antoine Meillard.)
STEVENS, CHARLES - -	1388	6th June 1860	An improved mode of preparing various plants to be used in the manufacture of paper. (Communicated by Eugène Helenus.)
STEVENS, CHARLES - -	1419	9th June 1860	Smoke consuming furnaces. (Communicated by Toni Fontenay.)
STEVENS, CHARLES - -	1598	3rd July 1860	An improved navigable balloon or aërostatic ship. (Communicated by C. F. Rablat.)
STEVENS, CHARLES - -	1724	17th July 1860	An improved method of preserving potatoes cut in pieces by a machine for that purpose. (Communicated by Vignal and Roustain.)
STEVENS, CHARLES - -	1745	18th July 1860	An improved screw cutting machine. (Communicated by J. B. Derenne.)
STEVENS, CHARLES - -	1910	8th Aug. 1860	An improved plant protector. (Communicated by Julius Romiguère.)
STEVENS, CHARLES - -	1911	8th Aug. 1860	An improved mode of binding up brooms, together with the machine used for that purpose. (Communicated by Perrin de Caderousse.)
STEVENS, CHARLES - -	1937	10th Aug. 1860	Boilers. (Communicated by Jean Carrère.)



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
STEVENS, CHARLES - -	2181	7th Sept. 1860	An improved method of preserving various alimentary substances. (Communicated by Madame Louis Fauve.)
STEVENS, CHARLES - -	2182	7th Sept. 1860	An improved impermeable oil varnish. (Communicated by Antoine Bouet.)
STEVENS, CHARLES - -	2183	7th Sept. 1860	Improved bags to be used in the manufacture of sugar. (Communicated by Edouard Fourmeaux.)
STEVENS, CHARLES - -	2184	7th Sept. 1860	An improved lavatory. (Communicated by Flury Jourjon.)
STEVENS, CHARLES - -	2252	17th Sept. 1860	A new medico-chirurgical bleeding instrument. (Communicated by Baudouin and Guérin de Tencin.)
STEVENS, CHARLES - -	2448	9th Oct. 1860	Atmospheric railways. (Communicated by V. Clovis Simboiselle.)
STEVENS, CHARLES - -	2472	11th Oct. 1860	An improved crinoline protector or double petticoat. (Communicated by Clément Duplomb, père, Jean Marie Duplomb, fils, and Louis Frédéric Leorien.)
STEVENS, CHARLES - -	2507	15th Oct. 1860	An improved machine for cutting out bricks and drain pipes. (Communicated by Louis Constant Desaint.)
STEVENS, CHARLES - -	2759	9th Nov. 1860	An improved machine for raising water. (Communicated by Jean Baptiste Guignes.)
STEVENS, CHARLES - -	2811	16th Nov. 1860	Sheet-iron tiles. (Communicated by Count du Vigier and Viscount du Vigier de Mirabel.)
STEVENS, CHARLES - -	2942	30th Nov. 1860	Smoke-consuming furnaces. (Communicated by Toni Fontenay.)
STEVENS, CHARLES - -	3035	11th Dec. 1860	An impermeable anti-sulphuric coating for leather. (Communicated by I. Chapa and Lacaze.)
STEVENS, CHARLES - -	3104	18th Dec. 1860	A new mode of obtaining an article resembling honey, and to be used as a substitute therefor. (Communicated by François Vachon.)
STEVENS, CHARLES - -	3105	18th Dec. 1860	An improved cooking stove. (Communicated by Mr. Zimmermann.)
STEVENS, JAMES JOHN -	2130	4th Sept. 1860	Iron bedsteads. (Communicated by George Henry Faulkner.)
STEVENS, WILLIAM HENRY -	3156	24th Dec. 1860	An improved archer's bow and bow gun toy. (Patented by William Edward Newton.)
STEVENSON, WILLIAM BUENA- [VENTURA.	1511	21st June 1860	Improvements in apparatus for propelling, and in other rotary apparatuses.
STEWART, DAVID YOOLOW -	2138	5th Sept. 1860	Moulds for casting.
STIDOLPH, GEORGE FREDERICK	2470	10th Oct. 1860	Organs.
STIDOLPH, GEORGE FREDERICK	2977	4th Dec. 1860	Construction of crates and other packing cases.
STIDOLPH, JOHN - -	2470	10th Oct. 1860	Organs.
STIDOLPH, JOHN - -	2977	4th Dec. 1860	Construction of crates and other packing cases.
STOCKER, ALEXANDER SOUTH- [WOOD.	2103	31st Aug. 1860	Manufacture of horse-shoes.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
STOCKER, ALEXANDER SOUTH- [WOOD.]	2646	29th Oct. 1860	Improvements in the manufacture of horse and other shoes, and in the machinery or apparatus to be employed therein, part of which improvements are also applicable to metal boot heels and various other articles.
STOCKER, ALEXANDER SOUTH- [WOOD.]	3091	17th Dec. 1860	Manufacture of tyre for wheels.
STOCKLEY, JOSEPH - -	2455	9th Oct. 1860	Apparatus for grinding, smoothening, and polishing plate glass.
STOCKLEY, JOSEPH - -	2815	16th Nov. 1860	Apparatus for grinding, smoothening, and polishing plate glass.
STODART, JAMES - -	1953	13th Aug. 1860	Ships' propellers.
STODDART, ALEXANDER - -	261	1st Feb. 1860	Submarine telegraphic cables. (Communicated by John S. Davison.)
STODDART, DAVID - -	1791	24th July 1860	Improved means for relieving the slide valves of steam-engines of unnecessary pressure. (Patented by Alfred Vincent Newton.)
STOKES, JAMES - -	3146	22nd Dec. 1860	Sacking and joints for bedsteads.
STONE, EDWARD - -	1475	16th June 1860	Machinery for cutting veneers. (Communicated by John Ahsbohs.)
STONE, JOHN TAYLOR GURNEY	3169	27th Dec. 1860	An improved method of covering steel used for ladies' crinolines and other articles of dress.
STONE, SIDNEY MASON -	1935	9th Aug. 1860	Ventilating buildings, vessels, and mines. (Patented by Alfred Vincent Newton.)
STONES, JOSEPH - -	1406	7th June 1860	Manufacture of bobbin net or lace in bobbin net machines.
STONES, JOSEPH - -	2348	27th Sept. 1860	Manufacture of bobbin net or twist lace in bobbin net or twist lace machines.
STORM, WILLIAM MONT- [GOMERY.]	2933	29th Nov. 1860	Construction of breech-loading fire-arms.
STÖSSGER, LOUIS - -	37	5th Jan. 1860	Construction of locomotive engines. (Patented by Otto John Theodore Gössell.)
STOTT, FREDERIC SARLEY -	750	23rd March 1860	Singe plates.
STOW, WILLIAM - -	483	22nd Feb. 1860	An improved rifle ball. (Patented by Edward Dunkley Reynolds.)
STRADA, EDOUARD ARMAND [COUNT DE.]	1881	3rd Aug. 1860	Horses' bridles.
STRANG, MARY (otherwise Hut- chinson).	2491	13th Oct. 1860	Manufacture of lubricating oils.
STRATFORD, WILLIAM -	1356	2nd June 1860	Fire-bars.
STRATHEARN, JOHN - -	2267	18th Sept. 1860	Preparing cotton and other fibrous materials for spinning.
STRATHERN, ALLAN - -	1694	13th July 1860	Stop cocks or valves for regulating the flow of fluids.
STRATHERN, ANDREW - -	1694	13th July 1860	Stop cocks or valves for regulating the flow of fluids.
STRATHERN, ANDREW, junior -	1694	13th July 1860	Stop cocks or valves for regulating the flow of fluids.
STRAUSS, ADOLPH - -	71	11th Jan. 1860	Pipes for smoking.
STUART, CHARLES - -	348	9th Feb. 1860	Machinery or apparatus for the manufacture of soles for clogs, shoes, and pattens.
STUART, JAMES - -	1956	13th Aug. 1860	Treating hydro-carbon oils.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
STURROCK, GEORGE - -	693	15th March 1860	Revolving fire-arms.
SUCKLEY, THOMAS - -	1809	25th July 1860	Improved apparatus for smutting and screening grain and distributing other granular substances.
SUGDEN, JOHN - -	3194	31st Dec. 1860	Trombones.
SULLIVAN, CHARLES - -	1781	23rd July 1860	Improved machinery applicable to washing, and churning, and the mixing of fluids. (Patented by John Wells Sullivan.)
SULLIVAN, JOHN WELLS -	1781	23rd July 1860	Improved machinery applicable to washing and churning, and the mixing of fluids.) (Communicated by Charles Sullivan and William Francis Hyatt.)
SUMMERSCALES, JOHN -	1277	23rd May 1860	Washing, wringing, mangling, squeezing, and crushing machines.
SUMMERSCALES, JOHN -	1939	10th Aug. 1860	Improvements applicable to churns, washing and mangling machines, dough kneading machines, and mixing machines.
SUTHERLAND, THOMAS -	3107	18th Dec. 1860	Hulling and dressing rice and other grain. (Patented by Richard Waugh Mac Arthur.)
SUTTON, DANIEL - -	1139	8th May 1860	Construction of rollers for rolling and crushing land.
SWAIN, JOSIAH - -	239	30th Jan. 1860	Fire bars; means of actuating or shifting the same.
SWAN, HENRY - -	559	29th Feb. 1860	Stereoscopes, stereoscopic pictures, and cameras for taking the same.
SWETT, JAMES H. - -	2096	30th Aug. 1860	Manufacture of railway chairs. (Patented by John Henry Johnson.)
SWIFT, HENRY SPINK -	1518	22nd June 1860	Method of and apparatus for propelling ships, vessels, boats, or other craft in, on, or through the water.
SYKES, BENJAMIN CLIFFORD -	732	21st March 1860	Improvements in apparatus for heating water, air, or other fluids, generating and superheating steam, preventing incrustation in steam-boilers, and consuming smoke.
SYKES, BENJAMIN CLIFFORD -	3128	20th Dec. 1860	Improvements in furnaces.
SYKES, PHILEMON - -	208	27th Jan. 1860	Machinery or apparatus employed in spinning, twisting, and roving wool and other fibrous substances.
SYKES, REUBEN - -	208	27th Jan. 1860	Machinery or apparatus employed in spinning, twisting, and roving wool and other fibrous substances.
SYKES, THOMAS - -	732	21st March 1860	Improvements in apparatus for heating water, air or other fluids, generating and superheating steam, preventing incrustation in steam-boilers, and consuming smoke.
SYKES, THOMAS - -	3128	20th Dec. 1860	Improvements in furnaces.
SYME, JAMES - -	2384	2nd Oct. 1860	Improvements in tent frames, and in rendering coverings for tent frames and other textile fabrics and fibres and surfaces waterproof.
SYMONDS, THOMAS EDWARD -	2518	16th Oct. 1860	Marine steam-engines; machinery and apparatus connected therewith.
SYMONS, WILLIAM - -	479	22nd Feb. 1860	Self registering thermometers.
SYRETT, WILLIAM - -	2618	26th Oct. 1860	Steam-engines.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
SZERELMEY, NICHOLAS [CHARLES.]	3092	17th Dec. 1860	An improved method of and apparatus for purifying oils and varnishes.
<b>T.</b>			
TAILLANDIER, JACQUES	2604	25th Oct. 1860	Apparatuses for raising liquids. (Patented by Richard Archibald Brooman.)
TAIT, JAMES	3178	28th Dec. 1860	Certain articles of dress.
TAIT, WILLIAM	245	31st Jan. 1860	Distilling-apparatus. (Communicated by Thomas Forrester McFarlane.)
TALBOT, JAMES SMITH	2309	21st Sept. 1860	An improved mode of producing relief printing-plates, blocks, and cylinders. (Patented by Alfred Vincent Newton.)
TARDY, A. E.	448	18th Feb. 1860	An improved jointed blind. (Patented by Jozé Luis.)
TARTE, XAVIER	1040	25th April 1860	Improvements in the construction of floorings and roofings and other parts of buildings and other structures, which improvements are also applicable to the construction of bridges and other works.
TASKER, WILLIAM, junior	1314	28th May 1860	Straw-shakers for thrashing machines.
TATUM, JOEL HAYWOOD	2456	9th Oct. 1860	Manufacture of candlewick.
TAVERNIER, FERDINAND RA- [PHEL.]	2687	2nd Nov. 1860	Machinery for felting threads and other filamentous substances. (Patented by Richard Archibald Brooman.)
TAYLOR, GEORGE	751	23rd March 1860	Manufacture of hats, or of giving the final shape to the brims thereof.
TAYLOR, GEORGE	2863	24th Nov. 1860	Machinery or apparatus for preparing cotton and other fibrous substances for spinning.
TAYLOR, GEORGE EDWARD	2387	2nd Oct. 1860	Apparatus used when boiling cloth.
TAYLOR, JAMES	294	4th Feb. 1860	Locomotive engines and wheel carriages.
TAYLOR, JAMES	1096	1st May 1860	Improved apparatus for preventing a downward draft of air in chimneys, and for causing the smoke to ascend, applicable also for the purposes of ventilation.
TAYLOR, JAMES	1575	29th June 1860	Locomotive engines and wheel carriages.
TAYLOR, JAMES	1618	4th July 1860	Knitting-machinery.
TAYLOR, JAMES	2592	24th Oct. 1860	Self-acting mules for spinning and doubling.
TAYLOR, JOHN	751	23rd March 1860	Manufacture of hats, or of giving the final shape to the brims thereof.
TAYLOR, JOHN GEORGE	3090	17th Dec. 1860	Dress and other fastenings; application and manufacture thereof.
TAYLOR, JOHN GEORGE	3100	17th Dec. 1860	Manufacture of boots and shoes; method of measuring the human foot for fitting the same.
TAYLOR, JOHN HENRY	2289	20th Sept. 1860	Improved apparatus for lowering ships' boats and disengaging the same from the tackles.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
TAYLOR, JOHN INGHAM -	730	21st March 1860	Apparatus for the manufacture of gas from oil and oleaginous substances.
TAYLOR, JOHN INGHAM -	1645	9th July 1860	Apparatus for stamping, printing, and embossing.
TAYLOR, JOSEPH JEPSON ODDY	2346	27th Sept. 1860	An improved composition for vessels, furnaces, and other apparatus to be exposed to the operation of great heat and the effect of fluxes and the like.
TAYLOR, JOSEPH JEPSON ODDY	2683	2nd Nov. 1860	Separation of silicic acid and silicious and other matters from steel.
TAYLOR, MARK - -	751	23rd March 1860	Manufacture of hats, or of giving the final shape to the brims thereof.
TAYLOR, SAMUEL - -	1127	5th May 1860	Temples for looms; indicating the number of picks made in such machinery for a given length of cloth.
TAYLOR, THOMAS - -	2477	11th Oct. 1860	Manufacture of chenille; machinery for that purpose.
TAYLOR, WILLIAM - -	1364	4th June 1860	An improved handlight or portable greenhouse to be used for growing and protecting plants, either with or without artificial heat.
TAYLOR, WILLIAM - -	1371	5th June 1860	Improved heating of hot houses and other buildings by means of flat pipes made of any malleable material, and for manufacturing thereof.
TAYLOR, WILLIAM - -	1890	4th Aug. 1860	"Temples" used in weaving textile fabrics.
TAYLOR, WILLIAM BOWERS -	1080	27th April 1860	Looms for weaving.
TAYLOR, WILLIAM EDWARD -	1795	25th July 1860	Looms for weaving.
TAYLOR, WILLIAM ROWLAND	2593	24th Oct. 1860	Rifle belts.
TEISSERE, ALEXANDRE -	457	20th Feb. 1860	An improved blank stamping-press.
TELFER, JOHN - - -	1502	21st June 1860	Improvements in capstans and winches for hoisting, which improvements are also applicable to the steering of ships.
TELFORD, RICHARD - -	383	13th Feb. 1860	Castors.
TEMPEST, ROBERT - -	1999	18th Aug. 1860	Certain machines for preparing cotton and other fibrous materials.
TENAUD, JOSEPH - -	1	2nd Jan. 1860	An improved brick making machine. (Patented by José Luis.)
TENCIN, BAUDOUIN DE -	2252	17th Sept. 1860	A new medico-chirurgical bleeding instrument. (Patented by Charles Stevens.)
TENCIN, GUÉRIN DE - -	2252	17th Sept. 1860	A new medico-chirurgical bleeding instrument. (Patented by Charles Stevens.)
TERRILL, SAMUEL - -	1826	27th July 1860	Open air cooking apparatus.
TEULON, THOMAS WILLIAM -	1245	21st May 1860	Chimney tops.
TEULON, WILLIAM HENSMAN	2258	17th Sept. 1860	Brewing; apparatus employed therein. (Communicated by Anton Christopher Ludwig Reinhardt.)
THIÉBAUT, JOSEPH - -	1721	16th July 1860	Ornamentation of textile fabrics.
THIERRY, JACQUES HIPPOLYTE	1445	12th June 1860	Manufacture and composition of ink for printing.
THOMAS, EDMUND - -	22	4th Jan. 1860	A self acting water gauge for steam-boilers, with a regulator for the feed.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
THOMAS, P. E. - - -	3121	19th Dec. 1860	Treatment of caoutchouc, and the employment of a product obtained thereby for lubricating and coating bodies. (Patented by Richard Archibald Brooman.)
THOMAS, REBECCA - - -	1789	24th July 1860	Tires of wheels for vehicles used on common roads.
THOMAS, REBECCA - - -	2918	28th Nov. 1860	Venetian blinds for windows.
THOMAS, WILLIAM FREDERICK	1631	5th July 1860	Sewing-machines.
THOMAS, WILLIAM LYNALL -	2823	16th Nov. 1860	Construction of plates or shields for the purpose of resisting shot and other projectiles.
THOMPSON, EPHRAIM UPHAM	1888	3rd Aug. 1860	Machinery or apparatus to be applied to a shroud, stay, or other portion of the rigging of a navigable vessel, in order to enable the setting or tightening thereof to be effected and maintained.
THOMPSON, JAMES - - -	501	24th Feb. 1860	Manufacture of iron, steel-iron, and steel; apparatus to be employed in such manufacture.
THOMPSON, JOHN - - -	2552	19th Oct. 1860	Machinery used in boring, turning, and cutting metals and other substances; partly applicable for driving other machinery.
THOMPSON, JOSEPH - - -	1813	26th July 1860	Covers for jugs, also applicable to covers for other articles.
THOMPSON, NATHAN, junior -	2209	13th Sept. 1860	Boat building; apparatus used therein.
THOMSON, DAVID - - -	2774	13th Nov. 1860	Rotatory pumps for raising water and other liquids.
THOMSON, SAMUEL - - -	2926	28th Nov. 1860	Manufacture of iron.
THOMSON, WILLIAM - - -	2047	25th Aug. 1860	Means of telegraphic communication.
THONET, FRANZ - - -	1065	27th April 1860	Construction of wooden wheels.
THORN, PETER - - -	1061	27th April 1860	Improvements in signals applicable to domestic and other purposes.
THORNTHWAIT, WILLIAM [HENRY.]	61	10th Jan. 1860	Treatment and reduction of ores; manufacture of iron and steel; construction and mode of working the furnaces employed in such said manufactures.
THORNTON, EDWIN - - -	2184	10th Sept. 1860	Looms for weaving.
THORNTON, EDWIN MARTIN -	1912	8th Aug. 1860	An improved rein holder.
THORNTON, HENRY - - -	2722	6th Nov. 1860	Sheds for sheep.
THORNTON, JOSEPH - - -	2184	10th Sept. 1860	Looms for weaving.
THORNTON, THOMAS - - -	2184	10th Sept. 1860	Looms for weaving.
THRELFALL, RICHARD - - -	1349	1st June 1860	Improvements in the spinning machinery commonly called self acting mules.
THUILLIEZ, LOUIS ZÉPHIRIN -	933	14th April 1860	Spindles and other parts of spinning looms.
TIDCOMBE, GEORGE - - -	2002	18th Aug. 1860	Hydrostatic presses.
TIERNAN, ROBERT - - -	2614	26th Oct. 1860	Improvements applicable to infants' and invalids' feeding bottles and other purposes.
TILL, THOMAS - - -	811	29th March 1860	Machinery to be used in the manufacture of wrought and horse nails.
TILL, THOMAS - - -	2227	14th Sept. 1860	Certain improvements in machinery for making nails, applicable in particular to the making of that description of nails called "horse nails."

[Tim]

## ALPHABETICAL INDEX OF PATENTEES

[Tow]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
TIMMINS, JOHN - - -	144	20th Jan. 1860	Construction of safety cages and hoists for raising and lowering weights in mine and other shafts.
TIMMINS, THOMAS - - -	2695	3rd Nov. 1860	New or improved machinery for the manufacture of nails, spikes, and staples.
TINDALL, LORENZO - - -	444	17th Feb. 1860	A combined garden roller and seat.
TISDALE, WILLIAM SCUDDER -	2309	21st Sept. 1860	An improved mode of producing relief printing plates, blocks, and cylinders. (Patented by Alfred Vincent Newton.)
TISSERANT, JEAN BAPTISTE -	1104	2nd May 1860	An improved apparatus for obtaining pneumatic power. (Patented by William Edward Gedge.)
TIVOLI, VITAL DE - - -	38	6th Jan. 1860	A swimming and floating apparatus.
TIVOLI, VITAL DE - - -	1428	11th June 1860	Improvements in civil and military ambulances.
TIZARD, WILLIAM LITTELL -	2950	1st Dec. 1860	Fastening threaded nuts and bolts.
TOBEY, S. B. - - - -	664	12th March 1860	Improved machinery for making hat bodies. (Patented by William Edward Newton.)
TODD, JOSEPH COMPTON -	1336	30th May 1860	Machinery for preparing and spinning hemp and similar fibrous materials. (Patented by William Edward Newton.)
TOMLINSON, JAMES - - -	1999	18th Aug. 1860	Certain machines for preparing cotton and other fibrous materials.
TOMLINSON, JAMES - - -	2416	6th Oct. 1860	Certain machines for preparing cotton and other fibrous materials.
TOMLINSON, JOHN - - -	2312	22nd Sept. 1860	Fire-engines.
TOOMER, GEORGE ELGAR -	1113	3rd May 1860	An improved construction of plough.
TOOTH, WILLIAM HENRY -	277	2nd Feb. 1860	Improved machinery or apparatus to be employed in the manufacture, melting or refining of iron and steel, and in the manufacture of puddled steel and wrought iron.
TOOVEY, WILLIAM - - -	1040	25th April 1860	Improvements in the construction of floorings and roofings and other parts of buildings and other structures, which improvements are also applicable to the construction of bridges and other works.
TOURANGIN, ERNEST - - -	290	3rd Feb. 1860	Manufacture of iron; furnaces to be employed therein. (Patented by Richard Archibald Brooman.)
TOURNÉ, J. EUGÈNE - - -	2655	30th Oct. 1860	An improved mode of and apparatus for desiccating wet or moist substances. (Patented by Alfred Vincent Newton.)
TOWERS, WILLIAM H. - - -	2251	15th Sept. 1860	Construction of brooms. (Patented by Alfred Vincent Newton.)
TOWNSEND, G. W. - - -	464	20th Feb. 1860	An improvement in projectiles.
TOWNSEND, JOSEPH - - -	1647	9th July 1860	Obtaining sulphur, sulphite and hyposulphite of lime, and oxide of manganese from bye or waste chemical products.
TOWNSEND, JOSEPH - - -	3033	11th Dec. 1860	Obtaining animal charcoal and other products from bones and other animal matters.
TOWNEEND, JOSEPH - - -	3038	11th Dec. 1860	Treating bye products arising in the manufacture of soda and potash for the obtainment of antichlores and other useful products.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
TRACY, DWIGHT - - -	2806	15th Nov. 1860	Sewing-machines. (Patented by Alfred Vincent Newton.)
TRAIN, GEORGE FRANCIS -	1051	26th April 1860	Improved system of railway or tramway to be used with horses or other power, and passenger carriages for the same.
TRAIN, GEORGE FRANCIS -	1982	15th Aug. 1860	Rails for streets and roads; wheels and axles to be used thereon.
TRAIN, GEORGE FRANCIS -	2894	26th Nov. 1860	Improvements applicable to street railway carriages, part of which are suitable for other purposes. (Communicated by Ralph Nowell Musgrove.)
TRAIN, GEORGE FRANCIS -	2895	26th Nov. 1860	Steam carriages and the running gear for street and other railways. (Communicated by Messrs. Grice and Long.)
TRASK, ASA GOODELL - -	1708	14th July 1860	An improved manufacture of waterproof leather. (Patented by William Edward Newton.)
TRAVIS, JOSEPH SIDDALL -	2160	7th Sept. 1860	Traction engines.
TRAYES, JOHN - - -	1326	29th May 1860	Steam-boilers or steam and heat generators; application of heat.
TREMBLEY, PROSPER VERDAT [DU.	1737	18th July 1860	Break-apparatus suited for railway carriages and for other purposes.
TRENTER, WILLIAM - - -	1376	5th June 1860	Washing and wringing machines.
TREVITHICK, FREDERICK [HENRY.	1859	31st July 1860	Means or apparatus to be used in effecting the preservation of animal and vegetable substances.
TRIBE, THOMAS - - -	2658	30th Oct. 1860	Ships' berths, bedsteads, and sofas.
TRINQUIER, AUGUSTE ARMAND	2302	21st Sept. 1860	Surveying instruments.
TRIPP, THOMAS - - -	2206	13th Sept. 1860	An improved propeller wheel for ships. (Patented by George Edward Watts.)
TROCHON, PAUL - - -	1965	14th Aug. 1860	Improvements in the consumption of fuel, in superheating steam, and in the apparatus employed therefor. (Patented by Nicholas Wehnert.)
TRONCHON, ALFRED - - -	2238	15th Sept. 1860	Constructing iron and cast-iron dwelling-houses.
TROOST, LOUIS JOSEPH -	2492	13th Oct. 1860	Production of colours for dyeing and printing. (Patented by John Henry Johnson.)
TROTMAN, ADOLPHUS -	916	12th April 1860	Improved apparatus to be used in cleaning windows.
TROTMAN, THOMAS - - -	916	12th April 1860	Improved apparatus to be used in cleaning windows.
TROTMAN, THOMAS - - -	1667	11th July 1860	An improved dress fastening.
TROUVÉ, FORTUNÉ - - -	2765	10th Nov. 1860	A system of publicity called "memento agenda," otherwise an illustrated general cabinet and pocket agenda.
TRUMAN, EDWIN THOMAS -	1545	25th June 1860	Horse shoes.
TRUMAN, EDWIN THOMAS -	2052	25th Aug. 1860	An improved method of cleansing and purifying gutta-percha and other like substances and their compounds, and an improved apparatus to be employed therein.
TRUMAN, THOMAS RICHARD -	2195	11th Sept. 1860	Construction of wheels for traction and locomotive engines.
TRUSS, THOMAS SEAVILLE -	2333	26th Sept. 1860	Apparatus for the traction and propulsion of ships, boats, and other nautical vessels.

[Tuc]

## ALPHABETICAL INDEX OF PATENTEES

[Tyn]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
TUCK, JOSEPH HENRY - -	484	22nd Feb. 1860	Manufacture of cylinders, tubes, and other hollow bodies.
TUCK, JOSEPH HENRY -	2318	22nd Sept. 1860	Air pumps; machinery for actuating the same
TUCKER, HIRAM - -	3041	11th Dec. 1860	Bedsteads.
TUCKETT, CHARLES, junior -	2408	5th Oct. 1860	An improved method of ornamenting book covers, which is also applicable to other purposes.
TUFTS, AUGUSTUS - -	2280	17th Sept. 1860	Lanterns. (Patented by William Edward Newton.)
TUFTS, AUGUSTUS - -	2289	18th Sept. 1860	Gas meters. (Patented by William Edward Newton.)
TUFTS, NATHANIEL, junior -	2260	17th Sept. 1860	Lanterns. (Patented by William Edward Newton.)
TUFTS, NATHANIEL, junior -	2289	18th Sept. 1860	Gas meters. (Patented by William Edward Newton.)
TURNER, ALFRED ROGERS -	1232	19th May 1860	Penholders.
TURNER, ARCHIBALD - -	1780	23rd July 1860	Manufacture of elastic fabrics.
TURNER, LUKE - -	2226	14th Sept. 1860	Manufacture of elastic fabrics.
TURNER, THOMAS - -	958	16th April 1860	Certain improvements in rifling, applicable to either breech or muzzle loading fire-arms or ordnance.
TURNER, THOMAS ALLEN -	904	11th April 1860	Manufacturing the upper leathers of boots and shoes.
TURNER, WILLIAM - -	741	22nd March 1860	A new mode or method of making or manufacturing bread and other articles of paste and in the machinery or apparatus employed therein.
TURNER, WILLIAM - -	1770	21st July 1860	Bridges.
TURPIE, THOMAS - -	2187	10th Sept. 1860	Furling sails.
TURTLE, JOHN BAINTON -	3001	7th Dec. 1860	Improvements in the means of communicating signals, applicable to naval, military, and railway purposes.
TUXFORD, WILLIAM - -	657	10th March 1860	Furnaces.
TWEEDALE, ABRAHAM - -	1127	5th May 1860	Templates for looms; indicating the number of picks made in such machinery for a given length of cloth.
TWEEDALE, JOHN - -	1127	5th May 1860	Templates for looms; indicating the number of picks made in such machinery for a given length of cloth.
TWENTYMAN, ALFRED CHARLES	90	12th Jan. 1860	Machinery to be used in manufacturing spikes, bolts, rivets, screw-blanks, and other similar articles. (Communicated by James H. Sweet.)
TYE, THOMAS - -	317	6th Feb. 1860	An improved method of trapping sinks, especially adapted for kitchen and scullery sinks in domestic dwellings, to prevent escape of noxious effluvia therefrom.
TYLOR, WILLIAM HENRY -	2578	23rd Oct. 1860	Improvements in apparatus for heating and aerating saline or other liquids for baths, and in the salinometers employed in connection therewith, parts of which improvements are applicable to other purposes.
TYNAN, JOHN - -	552	29th Feb. 1860	Improvements in the construction of boats, and in the use or application of certain novel arrangements and apparatus thereto.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
TYRRELL, HARRY - - -	897	10th April 1860	An improved article of furniture.
TYRRELL, TIMOTHY - - -	1753	19th July 1860	Construction of tubular boilers.
U.			
UHLER, LOUIS CONSTANT - - -	2740	7th Nov. 1860	Liquid and fluid meters. (Patented by Richard Archibald Brooman.)
ULLMER, WILLIAM - - -	652	10th March 1860	Printing-machines.
ULMER, PHILIP - - -	807	29th March 1860	Spring bed-bottoms. (Patented by George Haseltine and John Adams Knight.)
UNDERHILL, JAMES - - -	2672	1st Nov. 1860	Window sash and casement fasteners.
UNDERHILL, WILLIAM SCOTT	2100	30th Aug. 1860	Manufacture of iron fencing or lattice.
UNDERWOOD, GEORGE HILL -	2431	8th Oct. 1860	Finishing and stiffening textile fabrics.
UNDERWOOD, JOSEPH - - -	1936	10th Aug. 1860	Dressing-cases and writing-cases.
UNGER, LEOPOLD - - -	1727	17th July 1860	Construction and arrangement of box irons used by laundresses and others for pressing and smoothing clothes and fabrics.
UNWIN, JOHN - - -	2801	15th Nov. 1860	A saloon barrel pistol knife.
UNWIN, PHILIP - - -	2801	15th Nov. 1860	A saloon barrel pistol knife.
UPWARD, ALFRED - - -	1094	1st May 1860	Apparatus employed in boring and tapping gas and water mains; fitting service pipes thereto.
UREN, EDWARD WILLS - - -	297	4th Feb. 1860	Improvements in a rotary steam-engine.
UTTLEY, JAMES - - -	1161	11th May 1860	Machinery or apparatus for spinning cotton, wool, silk, flax, and other fibrous materials.
V.			
VACHON, FRANÇOIS - - -	3104	18th Dec. 1860	A new mode of obtaining an article resembling honey and to be used as a substitute therefor. (Patented by Charles Stevens.)
VALAURI, JEAN BAPTISTE -	1914	8th Aug. 1860	An improved excavating machine for boring tunnels and performing other excavating operations. (Patented by Richard Archibald Brooman.)
VALLA, CURÉ - - -	1231	19th May 1860	Striking-clocks. (Patented by Charles Stevens.)
VALLANCE, PHILIP - - -	1733	17th July 1860	Construction of telescopic sights for rifles and other fire-arms and ordnance.



Van]

## ALPHABETICAL INDEX OF PATENTEEES

[Var

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
VAN DEN NEST, CLAES - -	2674	1st Nov. 1860	An improved mode of preparing or insulating electric conductors for telegraphic purposes either on land or under water. (Patented by William Edward Newton.)
VAN DEN OUWELANT, FERDINAND PIERRE JEAN.	2043	24th Aug. 1860	Apparatus to be applied to fireplaces for obtaining absorption of the smoke and a better combustion of the fuel employed therein.
VAN HINSBERGH, JEAN [HUBERT MARIE.	2691	2nd Nov. 1860	Cleaning and preparing pork's wool so as to give it the elasticity of horse hair and the flexibility of wool for bedding, sofas, chairs, etc., etc.
VAN KIRK, J. T. - - -	2241	15th Sept. 1860	Improvements in lamps for burning coal oil and other like combustible fluids, part of which improvements is applicable to gas fittings. (Patented by George Davies.)
VAN PETEGHEM, ——— -	1773	21st July 1860	Looms for weaving. (Patented by William Edward Newton.)
VANDENBURGH, ORIGEN -	921	13th April 1860	Improvements in projectiles and appliances of projection imparting great precision and great range of flight to projectiles forced through the air by gunpowder or other explosive compound, with facility for rapid discharge and for discharging many projectiles simultaneously by one projecting appliance, with the same advantages giving increased area to the space covered by the destructive projectile matter, and light weight and small space to the appliance for projection.
VANDENBURGH, ORIGEN -	2837	19th Nov. 1860	Improvements in projectiles to be used in guns and ordnance, and improvements in the appliances for their projection.
VANDENBURGH, ORIGEN -	3085	13th Dec. 1860	Breech pieces of breech loading cannon.
VANDENHOVE, JOHN FRANCIS	2266	18th Sept. 1860	Brewing malt liquors; apparatus employed therein. (Patented by Edward Joseph Hughes.)
VANDER-HAGEN, FRANÇOIS -	1587	28th June 1860	An improved apparatus for corking bottles, jars, and other vessels. (Patented by Charles Bosselaers.)
VANDEBURGH, GEORGE E. -	1448	13th June 1860	Mode of and apparatus for reducing silicious substances to a fluid state. (Patented by William Spence.)
VANGENEBERG, PIERRE - -	1397	7th June 1860	Improved locomobile steam saw mills.
VANNET, FRANCIS CHARLES -	1013	23rd April 1860	Buoys. (Patented by Richard Archibald Brooman.)
VARLEY, CROMWELL FLEET- [WOOD.	206	27th Jan. 1860	Improvements in electric telegraphs, part of the invention being applicable to other purposes.
VARLEY, CROMWELL FLEET- [WOOD.	2858	22nd Nov. 1860	Improvements in the regulation of heat, parts of the invention being applicable to other purposes.
VARLEY, SAMUEL - - -	525	25th Feb. 1860	A new or improved chain, and machinery to be employed in the manufacture of the said chain.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
VARLEY, SAMUEL ALFRED -	2858	22nd Nov. 1860	Improvements in the regulation of heat, parts of the invention being applicable to other purposes.
VASSEUR, JEAN BAPTISTE -	1454	14th June 1860	Treating vegetable substances so as to obtain paper-pulp and other useful products therefrom. (Patented by Michael Henry.)
VAUGHAN, CHARLES - -	960	17th April 1860	Manufacture of hoes.
VAUGHAN, EDWARD PRIME- [ROSE HOWARD.	2715	6th Nov. 1860	An improved plug for boats.
VAUGHAN, RICHARD - -	960	17th April 1860	Manufacture of hoes.
VAUGHAN, WILLIAM JAMES -	960	17th April 1860	Manufacture of hoes.
VAUVILLÉ, ERNEST - -	2139	5th Sept. 1860	A system of extracting juice from beet root and other plants.
VAUX, CALVERT - -	1340	31st May 1860	Application of steam to the warming of buildings and apartments; apparatus therefor. (Patented by Alfred Vincent Newton.)
VAVASSEUR, JOSIAH - -	2324	25th Sept. 1860	Machinery for rolling or polishing leather.
VEAL, THOMAS - -	629	8th March 1860	Curry-combs.
VEITCH, GEORGE - -	1170	11th May 1860	Construction of the bottoms of bedsteads, mattresses, couches, sofas, seats, chairs, and other articles for sitting or reclining upon, in order to render them more springy or elastic.
VENABLES, JOHN - -	2866	23rd Nov. 1860	An improved mode or modes of ornamenting the surfaces of earthenware, also applicable to the ornamenting of other useful articles.
VERCHER, JEAN AMÉDÉE -	163	21st Jan. 1860	An improved break for vehicles.
VERGNES, MAURICE - -	64	10th Jan. 1860	Galvanic batteries
VERGNES, MAURICE - -	2145	5th Sept. 1860	Construction of magnetic or electric helices.
VERNAY, LOUIS - -	2224	14th Sept. 1860	Apparatus for raising or lowering and weighing heavy bodies. (Patented by John Henry Johnson.)
VERNEZ, AUGUSTE MARIE [ALEXANDRE DOMINÉ DE.	301	4th Feb. 1860	An improved valve or cock for regulating or stopping the passage of gas, steam, water or other fluids.
VERNEZ, AUGUSTE MARIE [ALEXANDRE DOMINÉ DE.	302	4th Feb. 1860	An improved apparatus for carburating hydrogen or other gas for illuminating purposes.
VERNEZ, AUGUSTE MARIE [ALEXANDRE DOMINÉ DE.	2220	14th Sept. 1860	Treating coal naphtha; apparatus employed therein.
VERRIER, PIERRE - -	660	12th March 1860	Steam-boilers and engines. (Patented by George Davies.)
VERWEY, ANTON - -	1490	20th June 1860	Improvements in the proportions of ingredients and mode of manufacture of a chemical compound for softening water.
VERWEY, ANTON - -	2598	25th Oct. 1860	Improvements in the manufacture of soap.
VERWEY, ANTON - -	3039	11th Dec. 1860	Improvements in the proportions of ingredients and mode of manufacture of a chemical compound for softening water.
VICTORY, EDMUND - -	1265	22nd May 1860	Machinery or apparatus employed in spinning. (Patented by John Henry Johnson.)
VIDEGRAIN, RENÉ CHARLES -	41	6th Jan. 1860	Manufacture of artificial marbles.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
VIGIER, COUNT DU - -	2811	16th Nov. 1860	Sheet-iron tiles. (Patented by Charles Stevens.)
VIGNAL, ——— - -	1724	17th July 1860	An improved method of preserving potatoes cut in pieces by a machine for that purpose. (Patented by Charles Stevens.)
VIGOUREUX, STANISLAS -	504	24th Feb. 1860	Quills, spools, or bobbins. (Patented by Richard Archibald Brooman.)
VIGURS, HENRY - -	749	23rd March 1860	Certain improvements in the treatment of paper or cardboard; such paper or cardboard being used for cards, wrappers, or boxes for exhibiting and holding small articles usually sold on cards or in boxes, also in the form of such boxes and wrappers, and the manner of attaching specimens of contents thereto.
VILCOQ, LAURENT CHARLES [MARIE JOSEPH.	3190	29th Dec. 1860	Apparatus or machinery for triturating textile bodies and other substances.
VIN, JEAN BAPTISTE - -	783	26th March 1860	Shaping metals; machinery or apparatus employed therein. (Patented by John Henry Johnson.)
VINER, HENRY WILLIAM -	3189	29th Dec. 1860	Grand pianofortes.
VINES, RICHARD - -	2081	29th Aug. 1860	Self-acting transverse floats for the propelling of steam vessels without any back-water.
VIVIAN, ROGER - -	45	6th Jan. 1860	Improvements in constructing balls for cricket and other games, which invention is also applicable to spherical valves.
VIVIER, OCTAVE - -	158	21st Jan. 1860	Keyless watches.
VOELTER, HEINRICH - -	3182	28th Dec. 1860	Improved machinery to be used in the manufacture of paper. (Patented by William Edward Newton.)
VOGL, DAVID - -	117	17th Jan. 1860	Knapsacks, haversacks, and such like portable receptacles.
VON ETZEL, CARL - -	132	18th Jan. 1860	Permanent way of railways. (Patented by Siegerich Christopher Kreeft.)
VONWILLER, JACOB - -	119	17th Jan. 1860	An improved rotatory machine to be used as a water-wheel, steam-engine, or pump, and for transmitting at any distance motive-power.
VOSE, WILLIAM TILESTON -	2651	30th Oct. 1860	An improved pump or portable fire annihilator.
VOSS, WILLIAM HENRY CHRIS- [TIAN.	621	7th March 1860	A hydro-dynamical re-acting rotary steam-engine. (Patented by Edward Thomas Hughes.)
VOUILLON, FRANÇOIS - -	1577	29th June 1860	Drawing, twisting, and felting filamentous, fibrous, or textile materials.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
<b>W.</b>			
WADDELL, CHARLES DOUGLAS	1293	25th May 1860	Improvements in ordnance and fire-arms, and in the application and arrangement of the propelling agents with which they are charged.
WADSWORTH, JAMES - - -	2574	22nd Oct. 1860	Improvements in gas burners, and improved modes of manufacturing the same.
WADSWORTH, JOSEPH - - -	2574	22nd Oct. 1860	Improvements in gas burners, and improved modes of manufacturing the same.
WAIN, JOHN - - -	828	30th March 1860	Machines for spinning and doubling cotton and other fibrous substances.
WAIN, WILLIAM - - -	333	8th Feb. 1860	Steam-engines; apparatus for superheating steam.
WAIN, WILLIAM - - -	631	8th March 1860	Floating-docks. (Patented by George Henry Birkbeck.)
WAIN, WILLIAM HENRY - -	2085	29th Aug. 1860	A new or improved lamp.
WAINWRIGHT, GEORGE JAMES	2239	15th Sept. 1860	Manufacture of damasks and similar fancy goods.
WAITHMAN, JOSEPH - - -	2788	14th Nov. 1860	Manufacture of cords, twines, and similar articles; machinery or apparatus employed therein.
WAITHMAN, ROBERT WILLIAM	2788	14th Nov. 1860	Manufacture of cords, twines, and similar articles; machinery or apparatus employed therein.
WAKEFIELD, OBED - - -	521	25th Feb. 1860	Steam and other valves or cocks.
WALCOTT, GEORGE - - -	619	7th March 1860	An improved receptacle or receptacles for generating gas.
WALENN, WILLIAM HENRY -	2587	24th Oct. 1860	Improvements in magneto-electric machines, and in electro-magnetic engines.
WALKER, BENJAMIN - - -	130	18th Jan. 1860	Steam hammers.
WALKER, CHARLES VINCENT -	856	3rd April 1860	Manufacture of troughs for receiving electric telegraph wires.
WALKER, EDMUND - - -	254	31st Jan. 1860	Windlasses.
WALKER, HENRY - - -	152	21st Jan. 1860	Putting up or packing needles and other small articles.
WALKER, JAMES - - -	997	20th April 1860	Railway sleepers.
WALKER, JAMES - - -	1006	21st April 1860	Railway points or switches; keys for securing the rails in the chairs of railways.
WALKER, JAMES - - -	1647	9th July 1860	Obtaining sulphur, sulphite and hyposulphite of lime, and oxide of manganese, from bye or waste chemical products.
WALKER, JAMES - - -	3038	11th Dec. 1860	Treating bye products arising in the manufacture of soda and potash, for the obtainment of antichlores and other useful products.
WALKER, JOHN - - -	1486	19th June 1860	Mills or machinery for expressing juice from the cane and other like vegetable substances.
WALKER, JOSEPHUS - - -	2149	6th Sept. 1860	Self-acting temples.
WALKER, ROBERT - - -	542	28th Feb. 1860	Apparatus for preventing accidents in winding from mines, which apparatus is also applicable for other similar purposes.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
WALKER, ROBERT - - -	1669	11th July 1860	Improvements applicable to horse bits.
WALKER, SAMUEL, junior -	2885	24th Nov. 1860	New or improved machinery to be used in manufacture of twisted, reeded, and other ornamental metallic tubes.
WALKER, THOMAS - - -	35	5th Jan. 1860	Sewing-machines.
WALKER, THOMAS - - -	232	30th Jan. 1860	Means for cleansing sewage and other waters.
WALKER, THOMAS - - -	951	16th April 1860	Apparatus for indicating the height of water in steam-boilers.
WALKER, THOMAS - - -	1506	21st June 1860	Means or apparatus for indicating the height of water in steam-boilers.
WALKER, THOMAS - - -	1624	5th July 1860	An improved collapse detector pocket for protecting articles worn on the person.
WALKER, THOMAS WEST -	3101	17th Dec. 1860	Manufacture of ornamental bricks, tiles, and other articles of a similar nature; machinery or apparatus employed therein.
WALKER, WILLIAM HENRY -	511	24th Feb. 1860	Manufacture of boots and shoes.
WALL, ARTHUR - - -	2879	23rd Nov. 1860	Construction and internal arrangement of furnaces; preparation, manufacture, and treatment of clays and bricks and other articles made of clay, earthenware, or stone, used for the above and other structures.
WALLER, GEORGE ARTHUR -	1408	7th June 1860	Apparatus for filtering and solidifying.
WALLICH, GEORGE CHARLES -	3040	11th Dec. 1860	Apparatus for taking deep sea soundings.
WALLIS, GEORGE - - -	1299	25th May 1860	New or improved methods of preparing drawings, writings, designs, prints, or impressions of engravings and photographs, for the purpose of impressing or engraving the same in or upon metallic surfaces, and thereby producing printing or embossing surfaces or ornamental metallic surfaces, for such purposes as the same are or may be applicable to, also new or improved machinery to be employed in the said impressing or engraving.
WALLIS, JOHN WILLIAM -	2760	9th Nov. 1860	Book indexes.
WALLS, JOSEPH - - -	25	4th Jan. 1860	Improved arrangements of compound steam-engines.
WALLWORK, HENRY - - -	540	27th Feb. 1860	Weighting and clearing rollers used in machinery for preparing and spinning cotton and other fibrous materials.
WALMSLEY, JOHN - - -	2375	2nd Oct. 1860	Looms.
WALSH, JOHN - - -	614	6th March 1860	Improved machinery for cutting, tearing, crushing, or otherwise preparing for various useful and economical purposes furze or gorse, straw, bean-haulms, turnips, bark, flax, or any other vegetable substances.
WALSH, JOHN HENRY - -	1097	1st May 1860	Breech loading fire-arms; rests to be employed therewith, which rests are also applicable to other descriptions of fire-arms.
WALSH, JOHN HENRY - -	2255	17th Sept. 1860	Breech-loading fire-arms.
WALSH, JOHN I. - - -	1610	3rd July 1860	Apparatus for working, training, and leveling cannon on board of vessels and in fortifications, redoubts, and other places. (Patented by Thomas L. Braynard.)
WALTER, WILLIAM THOMAS -	2973	4th Dec. 1860	Means or processes for obtaining ornamental and other devices or effects on metal, glass, stone, and earthenware.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
WALTON, FREDERICK - -	209	27th Jan. 1860	Improvements in the manufacture of varnish and in treating oils, also in the application of products obtained therefrom.
WALTON, FREDERICK - -	2770	12th Nov. 1860	Insulating telegraphic conductors.
WALTON, JOHN WHITEHEAD -	312	6th Feb. 1860	Rifles and other small fire-arms.
WALTON, WILLIAM - -	1979	15th Aug. 1860	Manufacture of wire cards; machinery used therein.
WANOSTROCHT, VINCENT -	2910	27th Nov. 1860	Manufacture of mineral tar.
WARBURTON, JAMES - -	3055	12th Dec. 1860	Spinning and doubling.
WARD, JAMES - - -	1530	23rd June 1860	Water-closets.
WARD, JOHN, junior - -	2978	4th Dec. 1860	Construction of clothes dryers or folding racks for airing and drying clothes. (Patented by John Henry Johnson.)
WARD, SETH - - - -	508	24th Feb. 1860	Sewing machines.
WARD, WILLIAM GEORGE -	707	17th March 1860	Manufacture of fabrics in lace machinery; means or apparatus employed therein.
WARD, WILLIAM GEORGE -	2355	21st Nov. 1860	Lace machinery.
WARDLE, JAMES - - -	1992	17th Aug. 1860	Certain improved arrangements of the flues of steam-boilers.
WARDROPER, FREDERICK [BAYLY.]	2556	19th Oct. 1860	Construction of vessels for river navigation.
WARLICH, FERDINAND CHARLES	1660	10th July 1860	Manufacture of artificial coal fuel; apparatus employed in such manufacture.
WARNECK, LÉOPOLD CHRISTIAN	1646	9th July 1860	An improved method of treating the coffee husk for purposes of nutrition.
WARNER, ARTHUR - - -	2363	29th Sept. 1860	Improvements in the manufacture of iron, steel, copper, lead, tin, zinc, and their alloys, and in the manufacture of coke.
WARNERY, ANTOINE LOUIS -	228	28th Jan. 1860	Improved machinery for carding silk, silk-waste, and other filamentous substances. (Patented by William Edward Newton.)
WARREN, FRDREDICK - -	3160	26th Dec. 1860	Machine used for cleaning cotton, and commonly called a "churka" or "roller gin."
WASHBURN, THEODORE S. -	338	8th Feb. 1860	Sewing-machines. (Patented by George Whight.)
WATEAU, CLOVIS - - -	1368	4th June 1860	An improved apparatus for cooling beer and other liquids.
WATERMAN, HENRY - - -	662	12th March 1860	Steam-engines. (Patented by Alfred Vincent Newton.)
WATERS, HENRY - - -	238	30th Jan. 1860	New or improved machinery to be used in the manufacture of guns and pistols, and for shaping metallic and non-metallic substances for other purposes.
WATKINS, ALEXANDER - -	280	3rd Feb. 1860	Timekeepers.
WATTS, ALFRED JOSEPH -	204	26th Jan. 1860	The manufacture of gold in a new form and its use in such form for filling or plugging teeth. (Patented by William Edward Newton.)
WATTS, GEORGE EDWARD -	2206	13th Sept. 1860	An improved propeller wheel for ships. (Communicated by Thomas Tripp.)
WATTS, JOEL - - - -	756	23rd March 1860	An improved safety valve.
WEARING, GEORGE - - -	2493	13th Oct. 1860	Certain improvements in the manufacture of saucepans formed of cast iron, and which said improvements are also applicable to the manufacture of general cast iron hollow-ware.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
WEBB, EDWARD BRAINEED -	1496	20th June 1860	Breakwaters and piers.
WEBB, JOHN - - -	913	12th April 1860	Cartridges employed in blasting.
WEBB, SAMUEL - - -	2695	3rd Nov. 1860	New or improved machinery for the manufacture of nails, spikes, and staples.
WEBB, THOMAS - - -	1896	4th Aug. 1860	Gates.
WEBBER, JOHN, junior -	2583	23rd Oct. 1860	An improved mode of and apparatus for converting rope into oakum.
WEBER, LIONEL EDWARD -	1606	3rd July 1860	Pipes and cigar holders.
WEBSTER, JAMES - - -	1913	8th Aug. 1860	Manufacture of prussiate of potash and Prussian blue.
WEBSTER, JAMES - - -	2711	5th Nov. 1860	Obtaining gas (mainly oxygen) for improving artificial light and for other purposes, also for utilizing the products resulting from its manufacture.
WEBSTER, JOHN - - -	1672	11th July 1860	Construction of circular knitting machinery.
WEBSTER, JOSEPH THOMAS -	2504	15th Oct. 1860	Driving the spindles of doubling frames.
WEEKS, JOHN - - -	409	14th Feb. 1860	Umbrellas and parasols.
WEEMS, JOHN - - -	796	28th March 1860	Improvements in steam-boilers or heat and steam generators, and in the application of heat.
WEERTS, PIERRE JULIEN -	467	21st Feb. 1860	Preparation of stuffs in general.
WEHNERT, NICHOLAS - -	1965	14th Aug. 1860	Improvements in the consumption of fuel in superheating steam, and in the apparatus employed therefor. (Communicated by Paul Trochon.)
WEILD, WILLIAM - - -	699	16th March 1860	Machinery for winding yarn or thread on to bobbins, spools, or other similar surfaces.
WEIR, GEORGE - - -	546	28th Feb. 1860	Regulating steam-engines, and regulating apparatus for steam-engines and other prime movers.
WEISKOPF, ELIAS - - -	2171	8th Sept. 1860	Manufacture of certain kinds of artificial combustible for lighting of wood and coal.
WEISS, CHARLES - - -	2081	23rd Aug. 1860	Manufacture of cloth; preparing and cleaning woollen flock. (Communicated by Frederick Samuel Britten.)
WELCH, JOSEPH JAMES - -	1310	28th May 1860	Collars, for gentlemen's, ladies', or children's wear.
WELCH, JOSEPH JAMES - -	1488	19th June 1860	Neck-ties, scarfs, and cravats.
WELLARD, CHARLES JOHN -	2613	26th Oct. 1860	Facilitating the division of sheets or pieces of paper or other substances into required forms; means or apparatus employed for the purpose.
WELLMAN, GEORGE - - -	2190	11th Sept. 1860	Carding-engines for carding cotton and other fibrous materials.
WELLS, JOHN HOWELL - -	2311	22nd Sept. 1860	Rocking chairs.
WELLS-GROLLIER, WILLIAM -	1149	9th May 1860	Horse mills. (Patented by Richard Archibald Brooman.)
WELSH, ANTHONY - - -	1505	21st June 1860	Means or machinery for preparing and polishing marble.
WELTON, THOMAS - - -	2820	16th Nov. 1860	Application of electricity or magnetism to the human body for the relief of pain and cure of disease.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
WENDELL, ISAAC P. - -	2664	31st Oct. 1860	Boxes for railway carriage axles and other shafts. (Patented by George Davies.)
WENHAM, FRANCIS HERBERT -	1386	6th June 1860	Steam-engines.
WESOLOWSKI, MAURICE - -	2546	18th Oct. 1860	Obtaining of light; apparatus employed therein. (Partly communicated by Johann Nepomuck Reithoffer.)
WESSON, DANIEL - - -	366	10th Feb. 1860	Manufacture of piano-fortes.
WEST, ANDREW - - -	80	12th Jan. 1860	Furnaces and apparatus to be used therein.
WEST, DANIEL - - -	1121	5th May 1860	An improvement for working the geometrical cotton press with steam power.
WEST, HIRAM EDWIN - -	2771	12th Nov. 1860	A machine for pressing and shaping straw hats or various other articles of like character.
WEST, JAMES - - -	1461	15th June 1860	Bowls or rollers of castors for furniture.
WEST, JOHN - - -	3126	20th Dec. 1860	Apparatus for drying grain. (Communicated by John Joseph West.)
WEST, JOHN AARON - -	2483	12th Oct. 1860	Treating solutions containing sulphate of soda, also metallic and other matters; obtaining products therefrom.
WEST, JOHN GEORGE - -	1042	25th April 1860	Compasses.
WEST, JOHN JOSEPH - -	3126	20th Dec. 1860	Apparatus for drying grain. (Patented by John West.)
WEST, ROBERT - - -	2018	22nd Aug. 1860	Construction of wet gas meters.
WEST, THOMAS - - -	3062	13th Dec. 1860	An improved apparatus for slicing, shredding, and pulping turnips and other roots.
WESTHEAD, EDWARD - -	2422	6th Oct. 1860	Generating steam; apparatus connected therewith.
WESTHEAD, EDWARD - -	2758	8th Nov. 1860	Improvements in boiling or evaporating soap, saline solutions, or other liquid substances.
WESTHORN, THEOPHILUS -	2295	20th Sept. 1860	Manufacture of oakum.
WESTMORELAND, EDWIN -	911	11th April 1860	Sewing-machines.
WESTMORELAND, WILLIAM -	911	11th April 1860	Sewing-machines.
WESTON, WILLIAM - -	1449	13th June 1860	Ovens for baking.
WESTWOOD, EDWARD - -	434	17th Feb. 1860	An improved mode of securing or holding corks in the necks of bottles, jars, or other similar vessels.
WESTWOOD, JOSEPH - -	1420	9th June 1860	Armour plates for iron ships and vessels or forts or batteries.
WETTER, CONRAD - - -	510	24th Feb. 1860	Manufacture of fermented and spirituous liquors.
WHARTON, WILLIAM, junior -	671	13th March 1860	Railway tracks and carriage wheels. (Patented by William Edward Newton.)
WHARTON, WILLIAM, junior -	2441	8th Oct. 1860	Railways or tramways; carriage wheels to be used thereon. (Patented by John Henry Johnson.)
WHEATCROFT, HENRY - -	1192	15th May 1860	Construction of machines for uniting portions of lace blond edging, nett and other fabrics, usually called "running on" machines.
WHEATLEY, SAMUEL - -	981	19th April 1860	An improved grinding strickle for grinding the cards on the cylinders of carding-engines.

Whe]

## ALPHABETICAL INDEX OF PATENTEES

[Whi]

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
WHEATMAN, JOHN - -	17	3rd Jan. 1860	Machinery or apparatus for grinding saws and other similar articles of metal.
WHEATSTONE, CHARLES -	2462	10th Oct. 1860	Electro-magnetic telegraphs and apparatus for transmitting signs or indications to distant places by means of electricity; means of and apparatus for establishing electric telegraphic communication between distant places.
WHEBLE, JAMES JOSEPH -	3003	7th Dec. 1860	Manufacture of artificial stone for building purposes.
WHEELER, ARTHUR - -	3013	8th Dec. 1860	Manufacture of railway carriages, trucks, engines, and other vehicles, so far as the balancing power, springs, and buffers are concerned.
WHEELER, GEORGE PRINTY -	2133	4th Sept. 1860	An improved mode of and apparatus for preparing half-stuff for paper-makers.
WHEELER, GEORGE PRINTY -	2134	4th Sept. 1860	An improved mode of and apparatus for preparing bleaching agents.
WHICHER, CHARLES - -	2400	4th Oct. 1860	An improved machine for applying steam in a manner to cause direct rotation. (Communicated by Messrs. Grande, Olivieri, and Mongiardino.)
WHIGHT, GEORGE - -	338	8th Feb. 1860	Sewing-machines. (Communicated by Theodore S. Washburn.)
WHIGHT, GEORGE - -	413	15th Feb. 1860	Winnowing and dressing machines. (Communicated by David Elon Norton.)
WHIPPLE, MILTON A. -	961	17th April 1860	Caloric engines. (Patented by John Henry Johnson.)
WHITAKER, SAMUEL - -	2430	8th Oct. 1860	Construction of fluid taps or cocks.
WHITBY, TIMOTHY - -	2471	10th Oct. 1860	Applying springs to railway trucks and to railway and other carriages.
WHITE, ARCHIBALD - -	867	5th April 1860	Lifting at one lift a load of corn, hay, straw, or manure, or of other things.
WHITE, ARCHIBALD - -	2537	18th Oct. 1860	An apparatus for drying hay, corn, and roots and other things.
WHITE, GEORGE - -	354	9th Feb. 1860	An improved machine for moulding candles. (Communicated by Messieurs J. Seeger & Co.)
WHITE, GEORGE - -	695	16th March 1860	Applying as a substitute for the animal albumen hitherto obtained from birds' eggs or blood, certain parts of reptiles, fish, mollusca, and articulated or radiated animals. (Communicated by Mr. Johann Georg Leuchs.)
WHITE, GEORGE - -	1058	27th April 1860	Machinery for pressing and cutting tobacco or other substances.
WHITE, JAMES - -	1058	27th April 1860	Machinery for pressing and cutting tobacco or other substances.
WHITE, JOHN - -	1058	27th April 1860	Machinery for pressing and cutting tobacco or other substances.
WHITE, WILLIAM - -	2696	3rd Nov. 1860	Colouring or obtaining the effect of colouring and other ornamentations to surfaces in relief or partly in relief.
WHITEHALL, EDWARD -	3133	20th Dec. 1860	Machinery for embroidering on lace and other fabrics.
WHITEHEAD, JESSE - -	1947	11th Aug. 1860	Harvesting-machines. (Patented by Richard Phillips.)



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
WHITEHEAD, JOHN - -	320	7th Feb. 1860	Moulding or shaping clay and other plastic materials; apparatus employed therein.
WHITEHEAD, THOMAS - -	2968	3rd Dec. 1860	Improved machinery for combing wool, hair, flax, tow, cotton, silk, and other fibrous substances.
WHITEHOUSE, CORNELIUS - -	3155	24th Dec. 1860	A new or improved mode of manufacturing frying-pans and other articles produced from sheet-iron or other metals.
WHITEHOUSE, EDWARD ORANGE [WILDMAN.]	1862	1st Aug. 1860	Testing insulated conductors.
WHITEHOUSE, EDWARD ORANGE [WILDMAN.]	2027	23rd Aug. 1860	Testing insulated conductors.
WHITEHOUSE, JOHN - -	1573	29th June 1860	An improvement in the manufacture of metallic door and other knobs, and a new or improved method of connecting door and other knobs with their spindles.
WHITESMITH, ISAAC - -	1455	14th June 1860	Looms for weaving.
WHITTAKER, DAVID - -	1919	8th Aug. 1860	Looms for weaving.
WHITTAM, ROBERT - -	2376	2nd Oct. 1860	Improvements in pentagraph machines used for engraving metal rollers or cylinders employed in printing calicoes and other surfaces.
WHITTEMORE, AMOS - -	2444	9th Oct. 1860	An improved machine for making horse-shoe nails. (Patented by William Snell.)
WHITWORTH, THOMAS SCHO- [FIELD.]	1195	15th May 1860	Machinery or apparatus for preparing and spinning cotton and other fibrous materials.
WHITWORTH, THOMAS SCHO- [FIELD.]	1895	4th Aug. 1860	Carding-engines.
WHITWORTH, THOMAS SCHO- [FIELD.]	2501	13th Oct. 1860	Machinery or apparatus for preparing, spinning, and doubling cotton and other fibrous materials.
WHITWORTH, THOMAS SCHO- [FIELD.]	2728	6th Nov. 1860	Machinery or apparatus for preparing cotton and other fibrous materials for spinning.
WHYTE, JAMES - -	2366	1st Oct. 1860	Improved apparatus for spinning or twisting.
WIART, FREDERIC STANISLAS	1706	14th July 1860	Pianos and organs. (Patented by Jean Mechim.)
WIDNELL, HENRY - -	428	16th Feb. 1860	Manufacture of embossed cut pile fabrics.
WIDNELL, HENRY - -	1474	16th June 1860	Printing and steaming threads and yarns of worsted and other materials for carpets and other fabrics; apparatus employed therein.
WIELAND, J. F. C. - -	1686	12th July 1860	Machinery or apparatus for sawing or cutting wood into veneers and planks. (Patented by John Ferguson.)
WIGZELL, EUSTACE - -	230	30th Jan. 1860	An improved form of land battery for coast and other fortifications.
WIGZELL, MONTAGUE - -	230	30th Jan. 1860	An improved form of land battery for coast and other fortifications.
WILCOX, JAMES - -	932	14th April 1860	Machinery or apparatus for sewing. (Patented by Edward Joseph Hughes.)
WILCOX, STEPHEN, junior - -	240	30th Jan. 1860	Hot air engines. (Patented by John Henry Johnson.)
WILD, ABRAHAM - -	1926	8th Aug. 1860	Mules for spinning and doubling.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
WILD, RICHARD - - -	2310	22nd Sept. 1860	Fasteners for window-sashes.
WILD, THOMAS - - -	2416	6th Oct. 1860	Certain machines for preparing cotton and other fibrous materials.
WILDSMITH, HENRY - - -	1154	10th May 1860	Extracting wool or other animal fibres from combinations of wool and cotton, and mixtures of other animal and vegetable fibrous substances or fabrics; machinery or apparatus employed therein.
WILDSMITH, JAMES HENRY [STAPLES.]	2168	7th Sept. 1860	A new or improved lubricating material or compound, which said material or compound may also be employed in the manufacture of soap.
WILKES, GILBERT - - -	217	28th Jan. 1860	A new or improved method of manufacturing wire for electric telegraphs, and for such other uses as the same is or may be applicable to.
WILKES, GILBERT - - -	2051	25th Aug. 1860	A new or improved method of manufacturing wire for electric telegraphs, and for such other uses as the same is or may be applicable to.
WILKES, JOHN - - -	217	28th Jan. 1860	A new or improved method of manufacturing wire for electric telegraphs, and for such other uses as the same is or may be applicable to.
WILKES, JOHN - - -	2051	25th Aug. 1860	A new or improved method of manufacturing wire for electric telegraphs, and for such other uses as the same is or may be applicable to.
WILKES, THOMAS - - -	217	28th Jan. 1860	A new or improved method of manufacturing wire for electric telegraphs, and for such other uses as the same is or may be applicable to.
WILKES, THOMAS - - -	2051	25th Aug. 1860	A new or improved method of manufacturing wire for electric telegraphs, and for such other uses as the same is or may be applicable to.
WILKINS, EDWARD - - -	1019	24th April 1860	Manufacture of boots, shoes and goloshes.
WILKINS, JOHN - - -	1946	11th Aug. 1860	An improved inkstand.
WILKINSON, EDWARD - - -	482	22nd Feb. 1860	Sheep shears.
WILKINSON, SAMUEL JAMES -	1801	25th July 1860	Construction of boxes, trunks, or packing cases, to be called the "plicabilis" or folding box trunk or packing case.
WILKINSON, WILLIAM - - -	2186	10th Sept. 1860	Apparatus used when stacking straw and other agricultural produce.
WILLANS, JACOB GEOGHEGAN	293	4th Feb. 1860	Manufacture of soda.
WILLANS, JACOB GEOGHEGAN	2111	31st Aug. 1860	Manufacture of iron and steel.
WILLCOCK, JOSEPH - - -	1860	31st July 1860	Photographic apparatus. (Communicated by Pierre M. T. O. Coen Albites.)
WILLCOX, JAMES - - -	734	21st March 1860	Sewing-machines. (Patented by William Spence.)
WILLIAMS, CADOGAN - - -	1623	4th July 1860	Means or apparatus for the protection of the coast of a country from invasion by ships or other vessels.
WILLIAMS, CHARLES WYE -	2813	16th Nov. 1860	Improvements in steam-boilers for increasing the evaporative effect thereof, applicable also to stills and other like vessels or apparatus.



Name of Patentee, <sup>1</sup>	Number of Patent.	Date.	Subject-matter of Patent.
WILLIAMS, CLARENDON - -	1882	3rd Aug. 1860	A new or improved musical instrument. (Patented by William Edward Newton.)
WILLIAMS, ELIJAH DAY - -	586	3rd March 1860	Manufacture of artificial fuel. (Patented by John Henry Johnson.)
WILLIAMS, HENRY - - -	2542	18th Oct. 1860	Manufacture of boots.
WILLIAMS, JOHN GRIFFITH - -	3087	15th Dec. 1860	Extracting inflammable and other noxious gases from coal and other mines.
WILLIAMS, JOSHUA - - -	2779	13th Nov. 1860	An improved method of obtaining and applying motive-power.
WILLIAMS, VALENTINE [VAUGHAN.]	2772	13th Nov. 1860	An improved method of constructing stands for cameras, telescopes, surveying and other instruments, parts of which are applicable to other purposes.
WILLIAMS, WILLIAM - - -	557	29th Feb. 1860	Machinery or apparatus for effecting ventilation.
WILLIAMS, WILLIAM - - -	2131	4th Sept. 1860	Manufacture of tin and terne plates; apparatus employed therein.
WILLIAMS, WILLIAM MATTIEU	2474	11th Oct. 1860	Crayons for writing, drawing, and marking.
WILLIAMSON, ALEXANDER [WILLIAM.]	2285	20th Sept. 1860	Surface condensers.
WILLIAMSON, ALEXANDER [WILLIAM.]	2392	3rd Oct. 1860	Steam-engines.
WILLIAMSON, FRANCIS - -	721	20th March 1860	Looms for weaving.
WILLIAMSON, HENRY, junior -	2681	2nd Nov. 1860	Silver watch cases.
WILLIAMSON, JOHN - - -	721	20th March 1860	Looms for weaving.
WILLINGTON, HENRY - - -	340	8th Feb. 1860	Spectacles.
WILLIS, JAMES - - - -	984	19th April 1860	Improvements in the manufacture of umbrellas and parasols, part of which improvements is applicable to walking sticks.
WILLIS, THOMAS - - - -	1437	12th June 1860	Machinery for twisting, doubling, and winding yarn and thread.
WILSON, ALEXANDER - - -	1157	10th May 1860	Improvements in the construction of railway carriages, waggons, and trucks, which improvements are also applicable to vehicles for common roads.
WILSON, CHARLES EDMUND -	944	14th April 1860	Machinery for the manufacture of chenille.
WILSON, CHARLES EDMUND -	2014	21st Aug. 1860	Machinery for the manufacture of chenille.
WILSON, EDWARD BROWN - -	2581	23rd Oct. 1860	Wheels for railway purposes.
WILSON, EDWARD BROWN - -	2768	10th Nov. 1860	Improvements in the manufacture of railway wheels, tyres, axles, and points and crossings, which improvements are also applicable to the manufacture of ordnance tubes and metal cylinders generally.
WILSON, EDWARD BROWN - -	2817	16th Nov. 1860	Manufacture of railway wheels and other articles of cast steel or malleable cast iron.
WILSON, GEORGE - - - -	563	29th Feb. 1860	Improved machinery for moulding the caps of bottles and jars.
WILSON, GEORGE - - - -	2730	6th Nov. 1860	An improved construction of stoppered bottle.
WILSON, GEORGE FAIRBAIRN	347	9th Feb. 1860	Manufacture of ridge-stones and scythe-stones; machinery or apparatus employed for that purpose, which machinery is also applicable for other similar purposes.

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
WILSON, GEORGE FERGUSON	803	28th March 1860	Treating fatty and oily matters.
WILSON, GEORGE FERGUSON	2146	5th Sept. 1860	Lamps and lamp wicks.
WILSON, JAMES GREEN - -	452	18th Feb. 1860	Knitting-machines. (Patented by William Edward Newton.)
WILSON, JAMES GREEN - -	1871	2nd Aug. 1860	Knitting-machinery. (Patented by William Edward Newton.)
WILSON, JOHN - - -	1522	22nd June 1860	Manufacture or production of sulphur or brimstone, sulphurous acid, and sulphuric acid.
WILSON, JOSEPH - - -	2084	29th Aug. 1860	A new or improved warm bath.
WILSON, JOSEPH WILLIAM -	55	7th Jan. 1860	Apparatus for cleaning guns.
WILSON, JOSEPH WILLIAM -	1254	22nd May 1860	A new method of constructing and forming boxes or cases for containing and enclosing different articles, more especially during their transmission by post or other conveyance.
WILSON, JOSHUA HENRY -	871	5th April 1860	Machinery to be applied in the manufacture of bobbins used in the preparing and spinning of fibrous materials.
WILSON, RICHARD RENNER -	1017	24th April 1860	Apparatus employed in finishing textile fabrics.
WILSON, RILEY P. - - -	1535	23rd June 1860	An improved churn. (Patented by David Crozman Dinsmore.)
WILSON, ROBERT - - -	1655	10th July 1860	Finishing and folding of textile fabrics.
WILSON, ROBERT HENRY [CAPEL.]	2203	12th Sept. 1860	Registering thermometers.
WILSON, THOMAS - - -	103	14th Jan. 1860	Breech loading fire-arms.
WILSON, THOMAS - - -	685	15th March 1860	Breech loading fire-arms.
WILSON, THOMAS - - -	1168	11th May 1860	Projectiles and cartridges for fire-arms and ordnance.
WILSON, THOMAS - - -	1574	29th June 1860	Improvements in breech loading fire-arms and ordnance, and in cartridges.
WILSON, THOMAS - - -	1828	27th July 1860	Breech loading fire-arms and ordnance.
WILSON, THOMAS - - -	2476	11th Oct. 1860	Paper files or holders.
WILSON, THOMAS - - -	2488	12th Oct. 1860	Breech loading fire-arms, ordnance, and projectiles.
WILSON, THOMAS - - -	2638	29th Oct. 1860	Moveable spanners or screw wrenches.
WILSON, WILLIAM CHARLES -	347	9th Feb. 1860	Manufacture of ridge-stones and scythe-stones; machinery or apparatus employed for that purpose, which machinery is also applicable for other similar purposes.
WILSON, WILLIAM NEWTON -	319	7th Feb. 1860	Sewing-machines; apparatus connected therewith. (Partly communicated by Lucius Bigelow.)
WILSON, WILLIAM NEWTON -	601	5th March 1860	Apparatus for sewing-machines.
WILSON, WILLIAM NEWTON -	706	17th March 1860	Floor sweepers.
WIMBALL, HENRY - - -	1494	20th June 1860	Machinery or apparatus for making bricks, tiles, and drain pipes.
WIMPENNY, THOMAS - - -	2410	5th Oct. 1860	Machinery or apparatus to be employed for spinning cotton and other fibrous substances.
WINRAM, JAMES - - -	2350	27th Sept. 1860	Machinery for the manufacture of casks and other like vessels of capacity.
WINTER, EDWARD - - -	453	18th Feb. 1860	Library and office tables.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
WINTERBOTTOM, WILLIAM -	715	19th March 1860	Certain improvements in or applicable to steam-engines.
WITHERS, GEORGE - - -	1071	27th April 1860	Certain improvements in fire-proof wrought iron safes, chests, or closets, in locks for the same and other purposes, and for certain apparatus to be used in connection with the same.
WITSIL, GEORGE L. - -	795	27th March 1860	An improved washing machine. (Patented by William Edward Newton.)
WITZ, F. - - - -	1499	20th June 1860	Machinery for washing textile fabrics. (Patented by Rudolph Bodmer.)
WOOD, JAMES - - -	2180	8th Sept. 1860	Stereotyping apparatus.
WOOD, JOHN - - - -	1392	6th June 1860	Manufacture of cotton wadding; machinery or apparatus connected therewith.
WOOD, JOHN - - - -	2773	13th Nov. 1860	Improvements in threading needles for embroidering machines, and also an improved method of working the same.
WOOD, JOHN HEAP - -	2592	24th Oct. 1860	Self acting mules for spinning and doubling.
WOOD, WILLIAM - - -	702	16th March 1860	Manufacture of fibrous yarns and fabrics of cotton, flax, wool, or other material.
WOOD, WILLIAM ANSON -	1394	6th June 1860	Reaping-machines. (Patented by William M <sup>r</sup> Intyre Cranston.)
WOOD, WILLIAM SELBY -	2908	27th Nov. 1860	An improved arrangement of apparatus for curing smoky chimneys and for ventilating purposes.
WOODCOCK, ALONZO BUONA- [PARTE.	1750	19th July 1860	Manufacture of moulded articles of vulcanized india-rubber.
WOODCOCK, WILLIAM - -	441	17th Feb. 1860	Stoves.
WOODHOUSE, WILLIAM HENRY	2822	16th Nov. 1860	An improved method of and instrument for measuring distances.
WOODRUFF, PHILIP - -	851	3rd April 1860	Manufacture of iron from the puddling furnace for the purpose of rolling same into sheets intended to be coated with tin, lead, or any other metal, applicable also to the manufacture of all other sorts of sheet or bar iron where toughness, strength, and ductility are essential.
WOODWARD, RICHARD FRE- [DERICK.	654	10th March 1860	Connecting brooms and brushes to their sticks or handles.
WORBY, WILLIAM - - -	974	18th April 1860	Improvements in tilling land and in actuating agricultural implements by steam power, and in apparatus employed therein. (Partly communicated by Messieurs Schubart and Hesse.)
WORMS, HYPOLITE - -	3142	21st Dec. 1860	Magneto-electric machines. (Patented by John Henry Johnson.)
WORRALL, JOHN MAYO -	2993	6th Dec. 1860	Treatment of velvets, velveteens, and other fabrics on which there are floated welt threads to be cut.
WORSLEY, PHILIP JOHN -	26	4th Jan. 1860	Separation of silver and lead.
WORSTENHOLM, GEORGE -	2536	17th Oct. 1860	Screw stocks and dies for cutting or forming metal screws.
WORTHINGTON, EDWARD -	2446	9th Oct. 1860	Apparatus for preventing the retrogression of railway carriages on inclines.
WORTS, JAMES KING - -	400	14th Feb. 1860	Means or apparatus for obtaining motive-power.

Wri]

## ALPHABETICAL INDEX OF PATENTEEES

[Wro

Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
WRIGHT, BENJAMIN H. -	1189	11th May 1860	Electric conductors for telegraphic purposes; apparatus for and mode or means of transmitting signals between distant places. (Patented by William Edward Newton.)
WRIGHT, HENRY THOMPSON -	2186	10th Sept. 1860	Apparatus used when stacking straw and other agricultural produce.
WRIGHT, JAMES -	372	11th Feb. 1860	Construction of waterclosets. (Communicated by Max Schloss.)
WRIGHT, JAMES -	668	13th March 1860	An improved method, means, and process of treating wood so that it becomes so changed as to be well adapted for uses for which it is naturally unfit. (Communicated by Philander Shaw.)
WRIGHT, JAMES -	1049	26th April 1860	A new mode of preventing incrustation in boilers using sea or calcareous waters.
WRIGHT, JAMES -	1409	8th June 1860	An improved apparatus for washing and separating metals or their ores from impurities or other foreign matters which are mixed with them. (Communicated by Messrs. Barré Rougnon & Co.)
WRIGHT, JAMES -	2207	13th Sept. 1860	Construction of safety or Davy lamps. (Communicated by Mr. Laurent-Lermusiaux.)
WRIGHT, JAMES -	2208	13th Sept. 1860	Construction of boots and shoes. (Communicated by Lyman Reed Blake.)
WRIGHT, RICHARD -	2153	6th Sept. 1860	Manufacture and refining of sugar; apparatus employed therein.
WRIGHT, SAMUEL BARLOW -	1089	30th April 1860	Machinery for the manufacture of plain and ornamented bricks, slabs, tiles, and quarries.
WRIGHT, ZACCHEUS -	544	28th Feb. 1860	Machinery or apparatus for the prevention of accidents in mine shafts by the breaking of the rope or chain or disconnection of the drum from the engine, applicable also to other hoisting or lifting machinery or apparatus.
WRIGHTSON, FRANCIS -	1023	24th April 1860	Applying certain waste or refuse products to the purification of coal gas, and utilizing compounds obtained in purifying coal gas.
WRIGLEY, THOMAS -	2699	3rd Nov. 1860	Apparatus for filtering water and other liquids.
WROUGHTON, EDWARD -	1968	14th Aug. 1860	Machinery for ornamenting or embossing lace or other fabrics.



Name of Patentee.	Number of Patent.	Date.	Subject-matter of Patent.
<b>Y.</b>			
YARROW, THOMAS RICHARDSON	360	10th Feb. 1860	Steam-engines and boilers.
YATES, FREDERIC - -	185	25th Jan. 1860	Improved apparatus for generating certain gases to be used as fuel and as reducing agents in metallurgic and other operations, and improvements in furnaces to be heated and worked therewith.
YATES, FREDERIC - -	2174	8th Sept. 1860	Improvements in apparatus for and in the mode of manufacturing iron, steel, and other metals and substances, gaseous and solid fuel being thereto applied as the heating, reducing, cementing, and oxidizing agents.
YATES, THOMAS CHADWICK -	1436	12th June 1860	Manufacture of adjustable spikes for attaching to shoes or other coverings for the feet.
YATES, WILLIAM - -	2425	6th Oct. 1860	Steam-boiler and other furnaces; apparatus connected therewith.
YORKE, THOMAS - -	663	12th March 1860	Construction of hay-making machines.
YOUNG, GAVIN - -	2535	17th Oct. 1860	An improved hemming and binding gauge for sewing-machines.
YOUNG, JAMES - -	3025	10th Dec. 1860	Making moulds for casting.
YOUNG, JAMES HADDAN -	650	10th March 1860	Setting up (composing) and distributing types.
YOUNG, JAMES HADDAN -	1769	21st July 1860	Setting up (composing) and distributing type.
YOUNG, ROBERT - -	1176	12th May 1860	Apparatus for cleaning grain.
YOUNG, WILLIAM - -	2559	20th Oct. 1860	Ship building.
YULE, JOHN - -	270	2nd Feb. 1860	Steam-boilers.
<b>Z.</b>			
ZANNI, GEMINIANO - -	2182	8th Sept. 1860	Apparatus for roasting.
ZIMMERMANN, — - -	3105	18th Dec. 1860	An improved cooking stove. (Patented by Charles Stevens.)
ZIMMERMANN, CARL HEINRICH	802	28th March 1860	Apparatus used when weaving. (Patented by James Leonard.)
ZORN, FRIEDRICH WILHELM [JULIUS.]	2281	19th Sept. 1860	Improved apparatus for charging and closing the ends of cartridges. (Communicated by Mr. Henry Genhardt.)
ZOUBTCHANINOFF, SWIATOSLAR	1661	10th July 1860	A cement to prevent the leaking of all liquids and also dampness in buildings.
ZOUBTCHANINOFF, SWIATOSLAR	1662	10th July 1860	An improved compound for the coating of wooden ships, boats, and other structures used at sea.
ZYSEL, FRANCIS - -	2256	17th Sept. 1860	Construction of studs or fastenings for shirt-fronts and other articles of dress.

LONDON:  
Printed by GEORGE E. EYRE and WILLIAM SPOTTISWOODE,  
Printers to the Queen's most Excellent Majesty.





